

# The Missing Formula

*By*  
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*The Madge Sterling Series*

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# THE MISSING FORMULA

## CHAPTER I

### *Caught in the Storm*

"You couldn't hire me to spend a night alone at Stewart Island! Imagine how lonely and terrifying it must be for Anne Fairaday!"

Madge Sterling did not give the impression of a girl easily daunted. Gazing out across the stretch of ruffled water toward the pine-covered isle which drowsed like a huge green sea turtle in the heat of a midsummer sun, she made a most striking picture. Her auburn hair had been whipped carelessly back from her face by the wind. She was tanned to a healthy, mellow bronze, and the blue of her sweater exactly matched the blue of her eyes—eyes which at the moment were troubled and serious.

"It doesn't seem right for Anne to stay there without a companion," she continued, addressing the kindly-faced, elderly woman who stood beside her at the boat landing.

Mrs. Brady nodded soberly.

"We really should do something about it. I had no idea she was staying alone until Jack French told us this morning. Of course, the Fairadays always

have kept to themselves. This girl may not care to have us interfere in her private affairs."

"Everything is changed now, Aunt Maude," Madge protested quickly. "I'm sure Anne would have mixed more with folks if her father hadn't kept her so close at home. Now that he is dead she needs friends more than ever."

"Why not go over there this afternoon and find out how matters stand?" Mrs. Brady suggested quietly. "The least we can do is to invite her to stay here at the lodge until she has had time to plan her future."

Madge's face brightened and she gave her aunt an affectionate squeeze.

"I knew you'd say that! I'll start this very minute!"

She promptly untied a canoe moored at the landing but before she could launch it two men with axes swung over their shoulders came down the shore trail. Recognizing Mr. Brady and Old Bill Ramey, the man-of-all-work about the lodge, Madge was in the act of stepping into the canoe when her uncle hailed her:

She did not attempt an answer but waited until he drew nearer the landing. He came at a brisk pace, carrying his fifty-two years with a jaunty vigor that was the envy of many a younger man. His ruddy cheeks were framed in a healthy tan ac-

quired by a life-long devotion to the out-of-doors and his alert, blue eyes snapped with the joy of being alive.

"Where away, Chick-a-dee?" he inquired with interest.

"I thought I'd paddle over to Stewart Island," Madge informed. "Do you want the canoe, Uncle George?"

"No, you're welcome to it, only I wonder if you noticed the clouds," Mr. Brady turned to survey the horizon. "It looks to me as though a storm may blow up. It probably won't amount to much but I believe you'll be safer in the skiff."

"Oh, bother!" Madge grumbled, casting an agrieved glance at the boat. "It would take me all day to get over to the island in that cumbersome thing!"

After a brief study of the sky she thought better of it and reluctantly launched the skiff. She bent to the oars and with practiced skill sent the craft skimming over the water. Rounding the point, she lost sight of her aunt and uncle who had turned back toward the Brady lodge.

Madge had arrived at Loon Lake only three days before, but already she found herself slipping naturally back into the easy, carefree ways of a wilderness environment. She sniffed the fragrant balsam air contentedly and allowed the boat to drift while

she watched a long-necked crane sail majestically over the water.

"Oh, I wish the summers were years and years long," she thought wistfully. I could live here forever and never tire of it."

Madge always looked forward to the vacations spent at the Brady's Canadian fishing lodge, located on secluded Lake Loon, in a timber berth twenty miles from the nearest town of Luxlow. During the remaining nine months of the year, she lived with her aunt and uncle at Claymore, Michigan, but since Mr. Brady was an enthusiastic fisherman, each summer saw the trio headed northward.

Madge regarded Mr. and Mrs. Brady as parents for her mother had died when she was a baby and a short time later, her father, Graham Sterling had gone West on a prospecting expedition, never to be heard from again. Although the Bradys had built their lodge for private use, they had been induced to open it to a small number of select guests who appreciated good food and excellent fishing. Madge did not mind the extra work which fell to her lot since she always had time for the things she enjoyed. She liked all outdoor sports. She swam like a fish and was an expert with a canoe. Then too, she had a special talent for making friends and knew everyone in the vicinity of Loon Lake, including the guides, the tourists and the forest rangers.

Jack French, a handsome young ranger at Lookout 48, had not been slow in meeting Madge. He had taught her how to handle a canoe, where to look for bass and how to make a fire without matches; from him she had learned the names of trees and strange shrubs. He teased her too and laughed when she accused him of treating her as a child.

"Just you wait!" she had stormed. "I'll grow up one of these days—and when I do—"

"And when you do," he had picked her up, but with an undercurrent of seriousness, "well, then I guess it will be time for Jack French to watch out."

Madge caught herself gazing intently toward the lookout station visible on a distant hillside. Jack had called at the lodge only that morning yet somehow he had seemed changed, more reserved. He had tried to tease her in the old manner, but his kidding had lacked its usual carelessness.

During the three summers spent at Loon Lake, Madge scarcely had spoken a dozen words either to Anne Fairaday or her father. Often she had gazed speculatively at the fine home they had built upon Stewart Island, wondering why the two were so aloof. It was generally known that Mr. Fairaday was a noted chemist who had come North for his health and the belief was that Anne remained close at home to care for him.

"Now that he's gone I hope she'll agree to stay at

the lodge," Madge thought as she sent the skiff smoothly through the water. "I believe we'd become friends if we could ever really meet."

It was pleasant on the lake with the sun half-hidden under a cloud. More often than she realized, Madge rested on her oars to watch queer insects swimming in the water or birds winging low in search for fish.

She had covered little more than half the distance to Stewart Island, when abruptly, she ceased rowing. Toward the south shore of the lake, a red canoe could be seen cutting through the water at a lively rate.

"There's Anne Fairaday now!" she exclaimed. "Where's she going, I wonder?"

A moment later she saw the girl head directly for the main landing, apparently to obtain mail and supplies which were left there for her by the forest rangers or old Bill Ramey who made weekly trips to town.

"She's too far away to hail," Madge decided. "Unless I catch her as she returns to the island, I'll have made my trip for nothing."

After a brief mental debate, she again snatched up the oars, rowing steadily toward a rocky point on the south shore. It had occurred to her that while she awaited Anne's return she could busy herself resetting her uncle's minnow trap.

She crossed the lake and located the wire trap which had floated a short distance from its usual place. After baiting it with some bread which her uncle kept in a box under the boat seat, she anchored the trap in shallow water near the rocks.

Glancing up from her work, she was startled to see how dark it had grown. Dark clouds were rolling up fast.

"We're in for a real storm," she told herself uneasily. "I didn't think it would come up so quickly. Guess I'd better not wait for Anne. Unless a strike for home, I'll be caught in it."

A low, ominous roll of thunder warned her that she must act quickly if she wished to reach the mainland ahead of the rain. She turned the boat, and began rowing with all her strength. The breeze had quickened noticeably. As she passed beyond the lee of the point, waves struck the bow of the skiff with great force.

"Uncle George was wise to make me take the boat," she told herself grimly. "I'd hate to be out in a canoe in these waves."

She thought of Anne and glanced anxiously toward the far landing. The red canoe had turned back toward Stewart Island. Apparently, Anne realized the danger and she too was trying to race the storm. Her paddle slashed into the water with vicious force, but she made slow progress.

It was only a matter of minutes now until the storm would break. Madge cringed as a vivid flash of lightning zigzagged across the sky to illuminate an ugly mass of dark clouds. She was more afraid for Anne than for herself. She knew that the skiff would carry her safely ashore but the Fairaday girl was far from expert in handling her canoe and when the wind strengthened, she could easily be thrown crosswise to a wave and upset.

Each pull of the oars carried Madge nearer the girl. Already she could see that Anne was in grave danger. The waves were buffeting the canoe about like a log in a whirlpool.

Looking ahead toward the shoreline, Madge saw a sheet of white mist drop like a curtain upon the water. The rain was coming!

The murmur of the wind in the trees along the far shore had increased to an angry whine and branches began to bend and thrash wildly about. Madge braced herself for what she knew must come.

Another flash of lightning brightened the sky and at the same instant a deluge of rain descended, blotting out the shore. Madge worked desperately to keep the skiff from being swamped by the huge waves which were churned up. The wind howled in her ears, the rain slashed at her face. For several minutes she lost sight of the red canoe.

Then as the first onslaught of the storm seemed to have spent itself, the wind dropped and the rain fell in a steady downpour. Madge peered anxiously ahead, searching for Anne.

She sighted the canoe less than twenty yards away. Relief gave way to fear as she realized that Anne was struggling frantically to hold her own. Each time the canoe fell into a trough of a wave, Madge expected to see it dive for the bottom of the lake.

"Hold on! I'm coming!" she shouted encouragingly although she knew her voice could not carry half the distance.

Anne turned her head and at that very moment a huge wave descended upon her, catching her unaware. She made a valiant effort to maintain control, but failed. The mischievous wave lifted the canoe high, then tumbled it over on its side!

Madge heard a shrill cry of terror which was abruptly smothered out. The canoe floated free but Anne was not clinging to its side. She had disappeared.

## CHAPTER II

### *A Rescue*

MADGE worked grimly at the oars as she endeavored to reach the overturned canoe. What had become of Anne? With a fast beating heart, she watched the water for a glimpse of the girl.

She had nearly given up hope when she caught sight of a struggling form not far from the floating canoe. A hand emerged, only to sink again beneath the surface. Anne could not swim!

The realization drove Madge to even greater exertion. The next powerful sweep of her oars carried her near the struggling girl. She thrust out an oar, but Anne either failing to see it or lacking strength to grasp it, fluttered her hands weakly and went under again.

Without an instant's hesitation, Madge kicked off her pumps and plunged over the side of the skiff. Three long crawl strokes carried her to the place where Anne had submerged. Bending sharply at the waist she shot down in a surface dive. Groping about under water, she searched frantically for the body and could not find it. She was forced to the top for air but she went bravely down again and

this time her hand touched Anne's hair. She grasped it firmly, lifting the girl to the surface.

Anne was only semi-conscious but as she gulped air it gave her strength to renew her struggles. Madge hooked her firmly under the jaw and did not relax her hold. The waves beat down mercilessly upon the girls and each time the avalanche of water poured over their heads, Anne fought like a wild thing. Madge, encumbered by heavy clothing, found the battle exhausting.

"Hold your breath when you see a wave coming," she advised. "Don't struggle or we'll both drown."

Anne relaxed slightly and Madge managed to shift her into position for a safe carry. Using a powerful scissors kick and a one arm pull, she towed her slowly toward the skiff which had been carried some distance away.

Madge was nearly exhausted when they finally reached the boat and it discouraged her to know that the most difficult part of the rescue lay ahead. They must climb aboard the skiff, and unless they balanced it perfectly it would upset. The only alternative was to cling to the side until help came.

Madge glanced hopefully toward shore but she could not even see the Brady lodge and the rain likewise hid the lookout from view. Even should the storm abate, it might be fifteen minutes or an hour before Uncle George or Old Bill started out to



search. She doubted that they could hold out many minutes in the cold water.

"You must do exactly as I say," she ordered Anne. "I'll swim to the other side of the boat. When I give the word we must both climb in at the same time. If we don't work together, the boat will upset and then we'll be in a real pickle!"

"Oh, I can't, I can't," Anne half sobbed.

"Yes, you can. Do exactly as I say and we'll make it."

Anne nodded that she understood what was expected but Madge wondered if she really had the strength to obey. She swam to the other side of the skiff and at her signal both girls slowly raised themselves up from the water. The boat wobbled dangerously but Anne appreciated the need for caution. Working deliberately, they kept the skiff upright until both were safely over the edge. Exhausted by the effort, Anne sank down in a little heap on the bottom, shivering from nervous excitement and cold. Madge resisted the temptation to drop down beside her and snatched up the oars.

"I'll make for the island!" she cried, above the roar of the wind. "If we can reach the cove, the waves won't be so high."

The center of the storm appeared to have passed over, yet gigantic breakers continued to lash against the boat. The steadily falling rain made it difficult

for Madge to see where she was going and she depended largely upon her instinct for direction.

"Let me help," Anne presently offered, realizing that she was not doing her share.

"We're almost there," Madge returned without giving up the oars.

One glance at her companion assured her that Anne was in no condition to assist. She was a frail girl but rather pretty in spite of her bedraggled appearance. Her hair was dark and straight and her features were as regular as those of a statue. Madge judged her to be sixteen or seventeen but it was difficult to guess accurately for Anne's sober expression undoubtedly made her look older than she actually was. Her face was drawn and strained and she appeared to be still suffering from the shock of her mishap.

A few minutes later they reached the sheltered side of Stewart Island and a flash of lightning disclosed the curving shore line. As the oars struck bottom, the girls scrambled out into the water which came only to their knees, dragging the skiff out upon shore where the waves could not reach it. They made a quick dash for the house.

In the semi-darkness it looked gloomy and depressing. It was a large, rambling affair, more like a hotel than a house, and not at all in keeping with the type of shack or cabin usually erected in the

North. Branches of a tall birch tree brushed against the pointed roof and the wind whined most distressingly around the many corners of the building.

"I'd not enjoy coming here alone at night," Madge thought.

Her companion opened the kitchen door and they stomped in out of the rain.

"There's a fire in the library grate," Anne chattered, leading the way to an adjoining room. "Thank goodness I built it before I left."

They huddled before the glowing embers of the fireplace and Anne tossed on a fresh log which quickly blazed up.

"We can't stand around in wet clothing," she observed, looking appraisingly at Madge. "You're my size. I'll see what I can find for you."

Waiting for her to return, Madge gazed curiously about the library which was lined to the ceiling with books. The fireplace gave the room a cheerful appearance but she could not fail to notice the threadbare rug, the scanty furniture.

"Strange," she thought, "I always understood the Fairadays were well-to-do."

Her reflection was cut short by Anne's return. She had found a change of clothing for Madge who accepted it gratefully. After hanging up their garments to dry, the girls made coffee, sipping it luxuriously before the fire. As they chatted, Anne

brought up the subject of the rescue and in halting phrases tried to thank Madge.

"Please don't thank me," the latter protested. "It was nothing. Only if I were you, I'd certainly learn to swim."

"I should," Anne acknowledged ruefully. "I've always wanted to but never had the chance. Until lately, Father took so much care."

Madge nodded sympathetically and after explaining that she had only that day learned of Mr. Fairaday's death, invited Anne to stay at the Brady lodge.

"It's good of you to ask me," the Fairaday girl murmured, "and truly, I would like to accept. Just now I'm afraid I can't. You see, there's a special reason why I must stay here—for a few days at least."

She hesitated and did not explain. Madge looked troubled.

"I've written to an aunt in New York and as soon as things are settled I expect to live with her," Anne went on hurriedly. "I do appreciate your kindness only I know I'll be safe here. It's lonely but I'm used to that. The one thing that worries me is *what* I shall live on after the estate is settled. Father left only this house and a few hundred dollars."

Madge was startled by this frank disclosure. The shabby appearance of the interior of the house had

warned her that the Fairadays were not as wealthy as rumor would have it, but it was difficult to believe that Anne faced poverty.

"Father was never practical about money matters. He built this expensive house and installed a laboratory on the second floor that would do credit to a scientific institution. He spent so much on experimentation too."

"You must be proud of the name your father made for himself," Madge said politely.

"Yes, I am, and he was a dear, too. But if only he hadn't been so careless about details! Several times he made important discoveries, only to let others reap the commercial reward. Before his death he worked out some preparation which when applied to iron and steel prevented rust—several large companies were interested in it too. He promised me faithfully he would register the formula in the patent office."

"He never did?"

"No, he kept putting it off. He always said the formula wasn't perfected. He always assured me no one could steal it for he kept the experiments to himself and hid all the data where it would never be found." Anne laughed shortly. "Well, he did a good job of it! I've searched this house high and low and can't find a trace of it."

"You're certain the formula is valuable?"

"I'm sure of it." Anne arose and moved to the desk, returning with a letter which she dropped into Madge's lap. "Last week this came from the Alton Chemical Company—one of the firms Father negotiated with. You see the letter is signed by the president of the firm—G. H. Brownell and he says he is coming here soon to see me about the formula. If only I had it! I'm sure he would pay me a good figure for it. What became of the thing?"

"Ask me something easy. You searched the laboratory I suppose."

"A dozen times. I haven't given up though. I know I'll find it somewhere and I intend to stay here until I do."

"I wish I could help," Madge returned. "Aunt Maude says I have a talent for finding lost things. She always calls on me when anything is missing."

"Then consider that I'm calling on you now. We might start turning the house upside down this minute!"

Madge's eye had fallen upon the clock and she sprang to her feet with an exclamation of dismay.

"The search must wait until another day. Goodness! That clock must have skipped an hour or so! Aunt Maude will think I drowned in the lake. I must run. Mind if I wear your dress?"

"Of course not. It's only an old rag."

At the door, Madge hesitated.

"See here," she said bluntly, "my aunt will be put out because you feel you can't stay at the lodge. If anything should go wrong here—"

"Nothing will."

"You can't be certain, Anne. If you need help at any time or want to talk with me, fly a white flag from the boat landing. I'll see it from the lodge if the day is clear and come as fast as I can."

"All right," Anne agreed, "I have an old white skirt I can use."

She accompanied Madge to the beach, helping her launch the skiff. The rain had ceased falling and the sky was slowly clearing. Before saying goodbye, Madge promised Anne that she would have Old Bill search for the overturned canoe. Anne thanked her again for her kindness, urging her to return soon.

"Don't forget," she called, as her friend floated slowly away from the beach.

"I'll be likely to forget!" Madge chuckled softly to herself. "Even if I didn't like Anne, that missing formula would be sufficient bait! This has been an exciting day and unless I miss my guess the fun is only starting!"

### CHAPTER III

#### *A Puzzling Letter*

ALTHOUGH the sky had cleared, evening shadows were creeping over the lake. Madge rowed steadily, knowing that soon it would be dark. She wondered if her long absence from home had caused worry and was not greatly surprised when she sighted another boat on the lake.

"It's Uncle George and Old Bill," she decided. "They're out looking for me."

She waved her hand to assure them she was quite safe and in a few minutes, Old Bill, with a skillful sweep of the oars, brought the boat alongside the skiff.

"It's time you're getting back, young lady!" Mr. Brady called out with kindly gruffness. "Another ten minutes and we'd have been dragging the lake."

"Sorry," Madge laughed. "I thought you had more confidence in my ability to handle a boat."

"If you give me another scare like this, I'll wish I'd never brought you up here."

Madge did not take Mr. Brady's brusque manner seriously for she knew that it masked a kindly heart. He really had worried about her and blamed himself

for permitting her to start out ahead of the storm.

"I told Mr. Brady you knowed how to look arfter yourself," Old Bill broke in, his leathery face wrinkling into a multitude of tiny folds. "I knowed this storm would pass over quick—seen a lot of 'em in my day, I have. I kin remember when I was workin' on the Great Lakes—"

"Never mind," Mr. Brady interrupted. "Tell us another time."

"Yes, sir." The old boatman subsided into injured silence.

Old Bill loved to spin yarns—that was his particular failing. He was an inaccurate encyclopaedia of everything that went on, but only Madge, who thought him amusing, ever cared to listen.

He could relate the most fantastic tales of his adventures at Hudson Bay and various lumber camps. He had served as sailor on the Great Lakes and as guide to aspiring amateur fishermen who invaded Ontario, yet his real experiences were as nothing compared to those of his fertile imagination. His shack back of the Brady lodge was cluttered with melodramatic magazines which he read by the hour. He did as little work as possible about the lodge, yet if a task struck his fancy, glorified it until it became a task of gigantic importance.

"Your Aunt has been worrying," Mr. Brady told Madge. "What kept you so long?"

Madge explained that among other things she had jumped into the lake and wound up the tale of her adventure by mentioning the overturned canoe which had not been recovered.

"You go on home," Mr. Brady directed. "Bill and I will see if we can pick it up."

Before continuing toward the lodge, Madge pointed out the general locality where she thought the canoe might be found. When she pulled up to the boat landing a few minutes later, Mrs. Brady, who had been anxiously watching from the veranda, rushed down to meet her.

"I'm glad you're safe!" she exclaimed in relief. "I was so worried when the storm came up so quickly. Why, you've changed your dress! What happened and where is Anne?"

Madge repeated the story of her adventure, explaining that Anne did not wish to leave the island. After a slight hesitation, she related all that she had learned concerning the strange formula of Mr. Fairaday's. Mrs. Brady was astonished to hear that his fortunes had dwindled, but to Madge's disappointment she did not appear greatly impressed with the story of the formula.

"It sounds like one of Bill's yarns to me," she laughed. "Whoever heard of a chemical preparation to keep things from rusting? If you find the formula, Madge, I want you to fix me up a solution

for the kitchen pump! And for that rake your uncle left out in the rain!"

"It does sound fantastic, I admit, but somehow, I think there's something to the story. I do know that scientists have been trying for years to find a paint that will prevent rust. Why, it would mean a fortune to the person who discovered the secret."

"I don't doubt it," Mrs. Brady returned mildly. "I had no intention of trying to discourage you. By all means help Anne look for the missing paper or whatever it is, but don't build your hopes too high. It's very likely the formula never existed save in old Mr. Fairaday's mind. I've heard it said that he was a queer man."

Madge dropped the subject but that was not the last of it. When Mr. Brady and Old Bill returned a half hour later with Anne's canoe in tow, Mrs. Brady repeated the story for their benefit and at the supper table Madge was subjected to a great deal of goodnatured teasing.

"Just wait!" she retorted. "Anne and I may show you a thing or two about formulas! If we find it, the laugh will be on you!"

She fully intended to return to Stewart Island the following day, but when she awoke the next morning it was to find that a drizzling rain had set in. Everyone stayed close in except Old Bill who was forced to drive to town for supplies and mail. The

roads were muddy and he did not get back until after dark.

"Any letters?" Madge demanded eagerly.

"Not for you," he told her crossly, pitching a heavy sack of flour from his shoulder to the kitchen floor with such violence that it sent up a white cloud of dust.

"There's some pie in the oven," Madge said sweetly. "I know you must be hungry and tired." Her eye had fastened upon a slim, white envelope protruding from his hip pocket. "You *do* have a letter!"

"It ain't fer you, I said." Bill spoke more pleasantly for the mention of pie had softened his ill temper. He took the letter from his pocket and holding it to the light, squinted curiously at the postmark. "It's for that gal, Anne Fairaday. The postmaster told me to give it to her. Looks important too, comin' from New York."

"Bill Ramey!" Mrs. Brady interposed. "You're worse than a rural mail carrier when it comes to curiosity! Put that letter on the shelf. Madge can take it over to the island tomorrow."

"Yes ma'am."

Bill's reply was sufficiently meek but his face showed plainly that he did not like the order. He had always carried supplies and mail in person to Stewart Island or had left it in a covered box at the

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main landing across the lake from the Brady lodge. In previous summers, the Fairadays had tipped him well for the service.

After eating the supper Madge prepared for him, he shuffled out, permitting the kitchen door to slam behind him.

"He's peeved," Madge chuckled. "Poor Bill! His feelings are always being hurt."

The next morning dawned bright. Shortly after breakfast, Madge set out for Stewart Island, towing Anne's canoe behind the skiff. She had laundered the dress which had been loaned her and carried it neatly done up in paper. She would have forgotten the letter had Mrs. Brady not hurried down to the beach with it just as she was starting off.

The lake was smooth and Madge made good time over to the island. Anne had sighted her from afar and was at the water's edge to meet her.

"Oh, you found my canoe!" she cried. "What luck! But you shouldn't have ironed that dress. It was only an old one."

"Here's something more for you," Madge declared, producing the letter. "Bill brought it from town last night."

"Oh, thanks. Mind if I read it now?"

"Of course not."

Madge busied herself with the skiff while her friend eagerly ripped open the long white envelope.

Scarcely had her eyes swept the page when she uttered an exclamation of surprise.

"Madge, do you remember the young man who worked here on the island about a year ago? I mean Father's laboratory assistant."

"That queer fellow with the stoop shoulders?"

"I think he got that way from spending so much time bending over test tubes," Anne smiled. "I never liked him very well and was glad when Father discharged him."

"I never saw him except at a distance," Madge said, "and I've even forgotten his name. What about him anyway?"

"His name is Clyde Wendell," Anne supplied. "This letter is from him. He says he's coming here to see me on important business. Now what can that mean?"

"Doesn't he give a hint as to what the business is about?"

"Not the slightest. Here, read the letter for yourself."

Madge accepted the typewritten sheet and after scanning it briefly, returned it without comment.

"Clyde Wendell knew more about Father's work than any other person," Anne declared eagerly. "Perhaps he can tell me what became of the formula."

"But wasn't it hidden after he left?"



"I'm not sure. Father worked on it when Clyde was here. Then they disagreed. Father thought Clyde wasn't honest and finally discharged him."

"Why do you think Clyde would know where it is then?"

"He was always interested in the formula, Madge. And he knew Father's habits even better than I did. He could always recall what became of his misplaced things."

"Strange he'd be coming back just at this time," Madge mused. "Especially since he was discharged."

"Yes, Clyde was bitter toward Father at the time although he was paid several month's extra wages. He seemed friendly toward me though and he's likely forgotten all the unpleasantness by this time."

Madge did not wish to discourage her friend yet she found it difficult to believe Clyde Wendell would go far out of his way to be of service.

"Better not pin too much hope on him," she cautioned. "If we get busy we may be able to find that formula ourselves."

"I've given the house a general overhauling but we can search again. Shall we do it today?"

"Let's!" Madge agreed eagerly. "If only you had a hint as to what became of the thing! I suppose you've exhausted every possibility."

"I'm afraid so," Anne admitted. She hesitated and

then added: "But there's one clue I've neglected and it may be important."

"What's that?"

Anne smiled mysteriously, and linking arms with Madge, drew her toward the house.

## CHAPTER IV

### *A Fruitless Search*

"I'M AFRAID it really isn't much of a clue," Anne confessed, escorting her friend into the living room. "Just before Father died he tried to tell where he had hidden the formula but it was hard for him to speak. The nurse handed him paper and pencil and he managed to write a few words. He wasn't able to finish the message."

Anne moved over to the desk and took a scrap of paper from a pigeon hole. She handed it to Madge, watching her face closely as she scrutinized the cramped writing.

"Why, this doesn't make sense!" Madge protested. "It just says, 'written in secret—' Is this all of it?" Anne nodded.

"Only three words. I've puzzled over it until my head whirls. I've finally figured out that he was trying to tell me the formula had been written in some secret code."

"Why would he have done that? To protect it?"

"Yes, Father was obsessed with the idea that someone wanted to steal the formula, particularly after his trouble with Clyde. At the very last—"

Anne's voice broke. "—he wasn't quite himself. He kept calling for some one. 'Kim' he would say, 'Kim' and looked at me so strangely."

"He knew some one by that name?"

"Not to my knowledge. He probably was delirious."

It occurred to Madge that the entire idea of the formula might have been a delusion as her Aunt Maude had hinted. Tactfully, she broached the subject.

"Oh, no," Anne protested. "At one time the formula actually existed and it was an excellent piece of research—I know that. I'm confident it is here in the house somewhere. Probably in the most out of the way place. Since Father took pains to write it out in code, I'm sure he secreted it where one would never think of searching."

"Then our work is cut out for us," Madge laughed. "If we ever do find the formula we'll still have the code to unravel."

"And it will be a real one too! Father made a hobby of codes. Years ago he did work along that line for the government."

Madge's interest in the missing formula had somewhat cheered Anne and the girls began their search of the house with high hope. They spent the better part of an hour browsing about Mr. Fairaday's laboratory on the second floor, hunting

through old ledgers and desk drawers. Satisfied that the lost paper was not to be found there they made a similar inspection of the old chemist's bedroom, examining discarded letters and even searching behind pictures which hung on the walls.

"We might try the library," Anne suggested at length. "I've looked there of course, but I've never gone carefully through the book shelves."

They returned to the first floor and undaunted by the vast array of volumes lining the walls, attacked the stacks, working on opposite sides of the room. They went about the task methodically, removing each book from the shelf and shaking it carefully to see that nothing had been hidden between the pages.

Madge experienced a genuine thrill when an envelope, yellow with age, dropped from a volume of Keats' poems. The girls seized upon it only to be bitterly disappointed when it turned out to be of no value.

"How provoking!" Anne cried impatiently. "I guess you've wasted your morning, Madge."

"Oh, I don't consider it wasted," the other corrected without glancing up from the volume she was examining. "Say, this book looks interesting."

"What is it? Kipling? That particular volume was Father's favorite. It's a real good story too. Take it home if you like."

"I don't think I should since it was your father's—"

"Please do. I know you'll take good care of it."

"All right, but I'll bring it back in a few days."

"Keep it as long as you like."

Presently, Madge said that she must return to the lodge and Anne accompanied her to the boat landing. Both were discouraged but tried not to disclose it to the other.

"Well, if we never find the formula, there's one thing I can always do—sell this house. Jake Curtis has been after me to sell it to him ever since Father died."

"Jake Curtis!" Madge exclaimed sharply. "Don't you ever do it. He wouldn't give you half what it's worth. He has the reputation of being the shrewdest real estate shark in these parts."

"I know. He wants to turn the house into a summer hotel."

"And ruin Loon Lake. Imagine this place swarming with the sort of folks Jake Curtis would attract. The fishing would be ruined in two seasons!"

"He practically wants me to give him the place," Anne informed. "You see, he holds a first mortgage on it—not a very large one but sufficient to embarrass me. If the bank will loan me enough money to pay it off, I'll tell him to jump in the lake. I'd rather sell to anyone but him."

"When does the mortgage come due?"

"Next month."

Madge had heard her uncle remark that the local bankers were very reluctant to make loans at the present time and Anne's prospects appeared especially slim.

"Well, I wish you luck," she said turning to leave. "Things may straighten themselves out before the mortgage falls due."

The next few days found Madge too busy to paddle over to the island for three guests arrived from the city to try their fishing luck. They asked endless questions, demanded constant service and had enormous appetites. In spite of the extra housework, Madge had time to consider Anne's problem but she could think of no way out. Often too, her eyes turned toward Lookout 48 but while she frequently saw Jack French glide by in his canoe he never stopped at the lodge. Once she saw him carry a large box of groceries to Stewart Island.

"He has other things to do besides come to see me," she told herself. "Why should I care?"

Yet she knew she did care a great deal.

One afternoon toward the end of the week, Madge was snatching a few minutes rest on the veranda when the telephone rang. Mrs. Brady answered, and soon stepped outside to speak to her niece.

"I'm sorry to disturb you, Madge, but a stranger just telephoned from the White farmhouse. Jack French is bringing him out from town. He wants us to put him up for a few days."

"Friend of Jack's?"

"No, he merely brought him out as an accommodation. I don't know the stranger's name. He wants someone to meet him across the lake."

"Just my luck Uncle George is gone. Isn't Bill around?"

"He is always missing when there's work to be done," Mrs. Brady smiled. "I think his intuition warns him. I'm sorry to call on you."

"Oh, I don't really mind, providing there's not more than one suitcase to ferry across," Madge assured her quickly. "And if our guest is a gentleman he may offer to row back."

She took her time crossing the lake for there was no sign of a car at the landing. Beaching the skiff she sat down on an old log. After a short wait she heard an automobile pounding down the private road which joined Loon Lake with the main highway. Madge arose expectantly.

A battered car swung into view and halted with a jerk. Jack French stepped lightly to the ground. He was a tall, handsome man, built like an All-American half-back, strong and straight, his every movement graceful. His face was richly tanned and

his brown eyes were always a-twinkle, as though the world amused their owner. One knew at a glance that he would be restless under a man-made roof. He loved the canopy of the blue sky, and a wood or a stream or some rare tree gave him a keener enjoyment than any artificial diversion could have done.

He grinned cheerfully at Madge, greeting her flippantly.

"Hello, child. Here's your new boarder—guess you've seen him before. I packed him out from Luxlow along with the grub."

Jack's gaze lingered half-quizzically as he spoke, but Madge looked beyond him to the man who was slowly climbing from the car. It was Clyde Wendell. The ranger had never liked him.

"I don't believe we ever really met," Madge stammered, slightly embarrassed at the unexpected meeting. "Of course, I've seen you from a distance."

The chemist turned, surveying her rather sharply. His eyes were penetrating and hostile.

"You're Miss Sterling, I suppose? I telephoned from the White's for a room at Mrs. Brady's lodge. If you're here to take me across the lake, let's get started. I've had a hard trip and I'm tired."

In spite of his desire for haste, the chemist made no move to lift his suitcases from the rear of the car.

He waited impatiently for the ranger to stow them in the skiff. Jack was provokingly slow.

"Aiming to do a little fishing?" he asked casually.

"I may."

"Then I'll give you a permit. This is a timber berth, you know and we have to be careful about fires."

"Do I look like I'd set one?"

"I didn't mean that," Jack returned amiably.

"In your case the permit is only a matter of form."

"Then why issue it? I lived here several months."

Jack did not respond but wrote out the necessary form and gave it to him. Clyde took it without a word of thanks and climbed into the skiff. Madge looked surprised and then went to the vacant seat beside the oars. She had expected that the chemist would at least offer to row across the lake.

"See here, Madge," Jack protested quickly. "You can't tote those heavy suitcases. I'll bring them over later tonight."

She would have accepted gratefully had not the chemist broke in irritably:

"The bags must go with us. I'll need them before evening."

"Really, I don't mind," Madge assured Jack. "Shove us off, will you, please?"

He complied, bestowing a look upon Clyde's back which was far from complimentary. At first

the skiff moved steadily through the water but before Madge had covered half the distance her arms began to tire. Clyde Wendell did not seem to notice. He stared moodily across the lake. Frequently, his dark, piercing eyes roved in the direction of Stewart Island.

The strangely tense expression of his face was not lost upon Madge. What thoughts could be running through his mind, she wondered? Why had he returned to Loon Lake?

"It's for no good purpose," she decided. "My guess is that he intends to make trouble for Anne Fairaday!"

## CHAPTER V

### *Clyde Wendell's Mission*

MADGE was washing breakfast dishes the next morning when Clyde Wendell entered the kitchen. He appeared in a better mood than upon his arrival and greeted her pleasantly.

"Good morning. I'd like to go for a little row on the lake. Can you let me have a boat?"

"I'll see what we have," she returned, wiping soap suds from her hands.

She walked down to the landing with him although she knew without looking that all of the boats save one were gone. The skiff had been rented out earlier that morning to another guest and Bill had taken one of the boats across the lake to gather stone for a new fireplace Mr. Brady was building. That left only a heavy, cumbersome craft which leaked rather badly.

"Perhaps you would prefer to wait until the skiff comes in," she suggested doubtfully. "We seldom rent out this boat. It's rather heavy and—"

"You keep it in reserve for yourself, eh?" the chemist interrupted with a knowing laugh. "Well, it looks like a good boat to me and I'll take it."

Madge started to protest then changed her mind. Without a word, she went to the woodshed and brought back a pair of oars which she fitted into the locks. Carelessly, she dropped a tin bucket into the bottom of the boat.

"What's that for?" Clyde demanded suspiciously.

"Oh, just in case of a leak."

The chemist should have been forewarned but the bottom of the boat was dry and he had implicit faith in his own judgment. Stepping into the craft he rowed away. Madge smiled as she watched him strike out across the lake. She returned to her dishes, but a few minutes later, hanging dish towels on the back porch, she observed that the boat had taken a direct course for Stewart Island.

"I wonder what he's up to?" she mused. "I don't believe he wanted me to know he was going over there to see Anne. I'd like to follow him over but of course that wouldn't do."

Though somewhat ashamed of her curiosity, Madge kept close watch of Stewart Island all morning. Toward noon the chemist's boat was sighted returning slowly across the lake. She was amused to see that he frequently dropped his oars to bail water.

Presently, the boat eased to a landing.

"Say, what do you mean by giving me an old leaky tub?" the chemist called out angrily as he

caught sight of Madge on the veranda. "I darn near drowned!"

"I guess the boat does leak a trifle," she admitted readily. "I tried to tell you but you were so determined not to wait for the skiff."

"You didn't hurt yourself trying to tell me! Look at my clothes—wet to the skin. If I hadn't bailed like all get-out I'd have gone to the bottom."

"The boat never entirely fills," Madge corrected sweetly.

Clyde stalked angrily into the house to change his wet shoes and garments. Madge tied up the boat, chuckling at his discomfiture.

"Something must have gone wrong over at Stewart Island," she thought shrewdly. "I'll find out when I see Anne again."

The opportunity was to present itself that very afternoon. Soon after luncheon, Clyde Wendell went for a walk in the forest and a short time later, Madge sighted Anne's familiar red canoe on the lake. As the girl came toward the lodge, she raced down to the water's edge to meet her.

Anne looked cautiously about before she beached her canoe.

"Clyde Wendell isn't anywhere near, is he?" she asked in a low tone. "If he is, I can't stay."

"He left a half hour ago. What's wrong, Anne? You look worried."

"I am. Oh, Madge, everything has gone wrong. You were right about Clyde. He didn't come here to help at all. He's the meanest man in the world!"

"What has he done now?"

"He claims I owe him five hundred dollars. Or rather, that Father did. He insists that several months back wages were due him at the time he left here. It's too ridiculous for words! Actually, Father paid him extra money to be rid of him."

"Haven't you a cancelled check or a receipt to prove it?"

"Not a thing. Father wouldn't bother about a receipt. Clyde knows that he was more than paid for his services. I'm afraid he thinks I'm inexperienced about business matters and that he can bluff me into giving him the money."

"I'd never do it."

Anne laughed shortly.

"No danger of that. I couldn't find five hundred dollars if my life depended upon it. The only way I can raise money is to borrow from the bank or sell my island. And in this country islands are as common as pine trees and about as cheap!"

"Not such islands as yours," Madge corrected. "Uncle George says you have an ideal location and the place should bring a tidy sum if sold to the right party."

"Well, Jake Curtis isn't the right party. I'm sure

of that. He knows it will be hard for me to pay the debt I owe him and I think he means to take advantage of me if he can. I'm to see the president of the First National bank today and ask him for a loan. Jack said he would take me to town in his car. Won't you come with us?"

Madge replied that she should not leave but Anne coaxed her until she gave in. They crossed the lake and found Jack waiting with his car. He seemed well pleased that Madge was to go along.

At Luxlow he dropped the girls at the bank, promising to call for them in an hour. They entered the building and Anne was admitted to the private office of the president. Madge waited outside.

Fifteen minutes elapsed before Anne emerged. The expression of her face disclosed instantly that the interview had not been successful.

"It's no use," she reported when they were outside again. "He listened politely enough to my story but he wasn't really interested. When I finished he said he was sorry he could do nothing for me. It seems the bank must have sound collateral and I've nothing to pledge."

Madge tried to cheer her companion, and since over a half hour remained before Jack would return, suggested that they go to a nearby drug store for ice cream. They walked slowly down the street, gazing at the window displays.



Suddenly Anne clutched her friend's arm, gripping it with a hard pressure. With a quick jerk of her head she indicated a man on the opposite side of the street.

"There's Jake Curtis!" she said tensely. "I hope he doesn't see me!"

No sooner had the words been spoken than the man turned toward the girls. He was a short, stout individual with ill-fitting, somewhat soiled clothing and a hard, shrewd face. Before Anne and Madge could dodge into a store he crossed the street and confronted them.

"Trying to avoid me, eh?"

"Why should I wish to avoid you, Mr. Curtis?" Anne countered.

"Well, there's a little matter of a note between us, y'know." He smiled unpleasantly. "Aiming to pay it off by the first, are you?"

"Why,—I—that is, I expect to," Anne stammered.

"Better think over that proposition I made you. You'll not find any other person in these parts who will take the house off your hands. I must warn you though, I'll expect payment of one kind or another on the day my note falls due."

"I'll bear it in mind," Anne returned coldly.

The girls turned their backs and walked hurriedly on. Anne was so agitated by the meeting that she

did not care to stop at the drug store so they returned to the bank there to await Jack.

"Jake Curtis surely deserves his reputation!" Madge declared in disgust. "Oh, Anne, don't ever sell him your island!"

"I don't know what else I can do."

"Perhaps Uncle George can find a buyer for you. I'll speak to him tonight about it. And then we may locate the formula. That would solve everything."

Jack soon returned and the three started for Loon Lake. Anne who was reticent by nature, made no mention of her discouraging bank interview, and although Madge would have liked to acquaint the ranger with the situation, she felt it was not her place to bring up the subject.

The sun was low over the lake when the car finally reached the end of the road. The girls thanked Jack for the ride and took leave of him. They crossed over to the lodge in Anne's canoe.

"I mustn't stop, Madge. It's getting late."

"Do come in for just a minute," her friend pleaded. "I baked a chocolate cake this morning and I want you to have half of it."

Anne permitted herself to be led toward the house. Madge quickly wrapped up the cake but scarcely had she finished than they heard a shout from the beach. The next instant Old Bill came hurrying toward the house.

"Come quick, folks! "An airplane's landin' on the lake. You'll miss it if you don't hurry!"

Madge laughed indulgently.

"Don't pay any attention, Anne. That's an old trick of his. He thinks every day is April Fool's. Think up something better, Bill."

"Honest, I'm not foolin' this time," Bill maintained with a seriousness which left no room for doubt. "Hear it?"

By this time the girls had caught the unmistakable drone of an airplane motor. They rushed from the house, following Bill to the beach, and were in time to see an amphibian spiral down and land smoothly on the water.

"Didn't I tell you!" Bill chortled proudly. "It was three years last month that a mail plane landed on Loon Lake. Engine must be out of whack."

Madge did not respond though she saw clearly that the plane was not of the regular mail service. Nor was it one of the "Fire Eagles" occasionally sent out by the Forest Service to scout for fires. As far as she could tell the plane was disabled in no way. The steady throb of its motors carried plainly over the water.

"Well, of all things!" Madge exclaimed. "What do you think of that!"

The amphibian was taxiing slowly through the water, its nose pointed directly toward the beach.

## CHAPTER VI

### *Startling Developments*

THE amphibian coasted slowly in toward the beach, throttled down its motors and finally came to a halt.

"Can you tell me if a Miss Fairaday lives anywhere on this lake?" the pilot called out.

Anne and Madge exchanged startled glances. The former stepped forward.

"I am she."

To her further astonishment, the pilot said a few words to his passenger, a well-dressed, elderly gentleman, who immediately climbed from the front cockpit. He presented his card to Anne.

"I'm Brownell from the Alton Chemical Company. I happened to be this way on a business trip and thought I'd drop in to discuss that matter which I wrote you about some time ago. By the way, we didn't hear from you."

Anne looked embarrassed and said hesitantly:

"I hadn't had time to write. You see, the formula—" she trailed off as Madge gave her a warning look. It would never do to tell Mr. Brownell that the paper was missing—not unless she wanted to

throw away her chance of ever selling it to him if it were found.

"If the formula is all your Father claimed it to be, we may be willing to enter into an agreement with you," Mr. Brownell declared. "Now if you'll just let me see the formula—"

"I'm afraid I can't now," Anne returned. "You see, I don't live here. My home is at Stewart Island."

Mr. Brownell brushed away her objections with a careless wave of his hand.

"Oh, I don't mind going there. In fact, if you're not afraid to ride in a plane, my pilot can take us both to the island."

"Well,—you see—that is, the formula was put away for safe keeping," Anne stammered.

"You mean you haven't it at hand? How soon can you get it?"

"I'm not sure. Perhaps I could write you later—"

"No, I've traveled a good many miles to see it. Fact is, our company is anxious to get just such a formula as your Father described to us. If you can get it in a day or so I'm of a mind to stay over. I can send my plane back to the city and return by train."

Anne was at a loss to know what to say. She looked doubtfully at Madge who was unable to help her.

"I can't make any promise about the formula," she said after a slight hesitation.

"You're not dealing with another company, I hope," Mr. Brownell said quickly.

"Oh, no. Father wrote to several firms, I believe, but I've not entered into any correspondence."

Mr. Brownell did not seem entirely convinced. He debated a minute, studying the lake meditatively.

"Any fish here?" he questioned abruptly.

"It's the best fishing lake in this part of the country," Madge informed quickly. "Only this morning my uncle caught a seven pound bass. And it put up a magnificent fight."

"I'd enjoy meeting a bass like that. If I can find accommodations I'll stay a day or so."

Madge suggested that her aunt might take him in, and arrangements were soon made. As the amphibian taxied away without its passenger, Clyde Wendell came down the trail. Anne did not wish to speak to him and hurriedly took her departure.

"What shall I do about the formula?" she whispered to Madge as they said goodbye at the water's edge. "Shall I tell him it's lost?"

"Not for a day or so," Madge advised. "If we can get him interested in the fishing it will give us a little time to search. We may find the thing yet."

Mr. Brownell had followed Mrs. Brady into the

lodge but Clyde Wendell lingered near the beach. As Madge turned toward the house he stopped her.

"Who is that fellow?"

"His name is Mr. Brownell."

"What was he saying to Anne Fairaday just a minute ago?"

"Really, I think you should ask her," Madge returned coldly.

She had no intention of telling him Mr. Brownell's real mission. Before he could ask another question, she walked away. However, the chemist was not so easily discouraged and that night at the supper table, he skillfully drew from Mr. Brownell the purpose of his visit to Loon Lake.

"If you're looking for a formula to prevent metals rusting, you may be interested in an idea of mine," Clyde suggested. "I've been working on it for years. If you have the time, I'd like to go into the matter in complete detail."

Mr. Brownell expressed a keen interest and the two retired to the veranda, there to talk more privately. They were still engrossed in deep conversation when Madge finished the supper dishes.

"If that isn't just what you'd expect of Clyde Wendell!" she thought in disgust. "He wouldn't care if he took the bread out of Anne's mouth. I do hope his idea is a flop."

After a time the two men went to their rooms.

Madge was closing the doors for the night when she heard the faint put-put of a motor boat, far out on the lake.

"I wonder who can be out so late?" she thought. "It might be one of the rangers only it doesn't sound like their boat."

She shut the door and thought no more of it. It was her intention to paddle over to Stewart Island early the next morning to aid Anne in the search for the formula. Upon arising, she was startled to observe a white flag flying from a high point on the island.

Madge did not wait for breakfast, fearing that something had gone wrong during the night and that her friend might be in trouble. As she beached her canoe at Stewart Island, Anne came running down to meet her.

"Anything wrong?" Madge inquired anxiously.

"I'll show you," Anne said impressively.

She led her companion to the house and they entered the dining room. Anne went directly to a huge walnut buffet and jerked open the drawers. They were all empty.

"That's what happened last night. All the silverware taken!"

"My word!" Madge scarcely could believe her eyes. "Why, I never heard of such a thing before at Loon Lake. Was the silverware very valuable?"

"I couldn't afford to lose it. Still, it wasn't such a costly grade of silver. I can't see why a thief would go to so much risk to steal it unless he thought he would find other valuables."

"What else was taken?"

"Nothing so far as I can tell. The library was ransacked but everything seems to be there."

"The library! How very odd!"

"Yes, I can't imagine what the thief thought he might find."

Madge started to say something, then closed her lips firmly. She had a theory of her own but decided not to mention it yet. She followed Anne to the library. Books had been pulled from their shelves and tumbled out upon the floor. Papers were scattered about and the desk appeared to have been opened.

"I haven't checked over all the books yet," Anne said, "though to my knowledge Father had only a few of any real value. They're all here."

"What time of night do you imagine the house was entered?"

"Oh, Madge, I have no idea. I must have slept so well that I didn't hear a sound. Strange that I didn't, for I'm sure the thief came upstairs. The laboratory appears to have been entered."

Madge expressed a desire to see Mr. Fairaday's workroom and was conducted upstairs. The lab-

oratory was in disarray. Boxes had been removed from the shelves, containers misplaced and files disturbed.

"It looks as if the thief were after something besides silverware," she commented. "I suppose your Father's bedroom was entered too?"

"No, apparently not. My room adjoins and I am sure I would have awakened if anyone had tried to open the door. Perhaps the intruder knew where I slept and avoided that part of the house."

Madge moved thoughtfully about the laboratory examining articles which had been misplaced. In spite of the disorder, the thief had left behind no clue to his identity.

"Anne, you haven't mentioned the formula to anyone save Mr. Brownell, have you?" she asked suddenly.

"Why, no. That is, except to Clyde Wendell. I asked him if he had any idea what could have become of it and he said he knew nothing about it. You don't think the person who came here last night was after the formula?"

"Perhaps not. It merely occurred to me." Madge lapsed into thoughtful silence. "I can't think of anyone save Mr. Brownell who would want to lay hands on that missing paper," she added, after a moment, "and I'm sure he never left the house last night. But just as I was going to bed, I do recall

hearing a motor boat out on the lake and it sounded as though it might be heading toward Stewart Island."

"Jake Curtis has one, Madge!"

"I thought of that right away but what reason would he have for coming here?"

"It's beyond me. All I know is that my silverware is gone. You don't suppose someone—Jake for instance, is trying to frighten me away from here?"

"That's a possibility," Madge conceded. "Jake is bent on getting this property by one means or another. Still, your theory doesn't entirely satisfy me."

From the laboratory the girls went to Mr Fairaday's bedroom. After a brief search which revealed no clues, they examined the other upstairs rooms and then returned to the first floor. The identity of the prowler remained a mystery.

"You can't stay here alone another night," Madge protested. "If you don't care to come to the lodge, then I think I should remain here."

"I wish you would!"

Madge did not look forward to a night at Stewart Island. She preferred her own comfortable room at the lodge to the gloomy, barn-like Fairaday home. However, for the sake of her friend, she was glad to undergo a little inconvenience. After promising

to return before nightfall, she took her leave.

Half way across the lake, she swung her canoe toward the lookout tower. Before she could climb the long flight of iron stairs to the platform, Jack French came down the trail, whistling a cheerful tune. He broke off as he saw Madge and greeted her with a broad smile.

"Hello, there. Why the serious expression so early in the morning?"

"I've had no breakfast for one thing. And for another, exciting events have taken place during the night."

"If this apple will help stave off the pangs of hunger, you're welcome to it," he said, taking a polished red Winesap from his jacket pocket. "Perhaps it will give you strength to tell me all about the excitement."

Madge accepted the apple gratefully.

"I'm afraid you'd give away the shirt off your back, Jack," she smiled.

"I would to you," he returned quietly. She glanced up, surprised at the tone of his voice. Before she could divine his meaning, he laughed. "What's an apple, Madge? No sense getting sentimental about one when I've a case at home."

Madge felt slightly rebuffed and immediately changed the subject to the one foremost in her mind. Jack listened attentively as she told him all that

had befallen the previous night at Stewart Island.

"I'll drop around there this morning and look things over," he promised. "Tracking down a thief isn't my line exactly, but I'll be glad to do anything I can to help you and Anne. This is the first theft that's been reported since I came to Loon Lake."

At the lodge, Madge repeated the story for her aunt's benefit but she took care that neither Clyde Wendell nor Mr. Brownell were within hearing distance. The latter had gone fishing with Old Bill as his guide, and their boat could be seen trolling slowly along the far shore. The chemist stationed himself in a comfortable chair on the porch. He appeared to be drowsing, yet whenever Madge glanced in his direction she noticed that he was watching the fishing boat intently.

"He seems afraid he'll miss something," she thought. "I wonder how long he intends to remain here?"

The chemist made no announcement of his future plans. He seemed content to sit and dream and think. In contrast, Mr. Brownell was a bundle of energy. He arose at dawn to fish and did not return until late in the evening. Several times Madge heard him remark that he must get over to Stewart Island to see Anne Fairaday, but each day saw him fishing instead.

Madge and Anne welcomed the delay for although they had searched the house many times, the formula could not be found. Mrs. Brady had been reluctant to have her niece spend the nights at Stewart Island, but after several had passed with nothing amiss, she had grown more accustomed to the idea.

One evening, four days after Mr. Brownell's arrival at the lodge, Madge was particularly anxious to get supper over with so that she might start for the island. It was nearly seven o'clock before Mr. Brownell and Bill came in with their string of fish. The president was proud of four large trout he had caught and after they were weighed, requested that they be prepared for supper. It was well after eight before the dishes were cleared away.

"I'll do them," Mrs. Brady offered. "You must hurry along, Madge."

It was dark by the time she pulled up on the beach at Stewart Island. There was no moon and the stars were half-hidden by black clouds. Madge could not see the house. If a lamp had been lighted, it did not shine out through the trees.

"This is a spooky place after dark," she thought uncomfortably. "Wish I had my flash."

It was difficult to find the path leading to the house. Groping about, she stepped into a mud hole which let her in to her shoetops. The trees along

the shore were dense and overgrown with vegetation. At length she found a trail but before she had followed it very far she discovered it was leading her deeper into the brush instead of toward the house.

She turned back, and impatient at the delay, walked hurriedly, paying slight attention to the ground underfoot. Unexpectedly, she stumbled over a vine. She tried to save herself but went down, striking her body against a hollow log which lay directly ahead.

Madge cried out but it was more from surprise than pain. In striking the log she distinctly had heard from within a strange metallic sound!

She gave the log an exploratory kick with her foot. Again she heard the sound.

"Something is hidden in there," she thought.

Stooping down, she groped about the opening at one end of the log. It was clogged with leaves and loose moss which she pulled away. She boldly plunged her arm into the opening.

"Hope I don't get it chewed off!" she chuckled.

Her hand grasped something hard.

"What in the world?" she gasped.

Then she knew. It was Anne's missing silverware.

## CHAPTER VII

### *In a Hollow Log*

"THIS is a discovery!" Madge assured herself as she made successive thrusts into the old log, tumbling out knives, forks and spoons. "Wait until Anne sees what I've found!"

Making certain that she had removed everything from the cache, she gathered up the silverware and hurried back to the beach. This time she made no mistake in selecting the path and a few minutes later saw the welcoming gleam of a light through the trees. She rapped on the door and after a brief wait, Anne flung it open.

"Oh, here you are! I was afraid you weren't coming. Why, what do you have?"

"Your silver," Madge laughed and thumped it down on the table. "See if it's all here."

"Where did you find it?" Anne was fairly dancing with excitement. "Oh, I'm so glad to get it back. Tell me, did the rangers capture the thief?"

"One question at a time," Madge protested. "I'll tell you everything while we check over the pieces. How many were there?"

"Twelve of everything."



Already Madge had started to sort the forks. Anne began on the spoons and while they counted, she learned of the strange hiding place.

"I've gone by that log a dozen times," she declared, "but it never occurred to me to look inside. Who could have hidden the silver there?"

"I wish you'd tell me. Why was it hidden there at all? If the thief broke into the house to steal it why didn't he take it away with him?"

"Perhaps he was afraid of being caught."

"Anne, I believe that the person who entered this house wasn't after the silver at all."

"Then why did he take it?"

"To throw you off the track or to frighten you," Madge returned impressively. "Either someone is after the formula or else trying to make you give up this house."

"It looks that way. I'd suspect Jake Curtis only it appears that if he were trying to frighten me, he would have taken a more effective means. We haven't been disturbed since you began sleeping here nights."

"I know," Madge agreed. "It may not be Jake at all. It could be someone who is after the formula."

"Mr. Brownell is the only one who wants it and you say he is so interested in fishing he can't think of anything else."

"Well, it seems that way. Of course, there's Clyde. Why do you suppose he stays around here so long?"

"To collect that money he claims I owe him," Anne returned with an angry toss of her head. "He rowed over here this afternoon to tell me that unless I paid him in a week's time he intended to sue! Oh, I wonder if any girl was ever in such a situation? Everyone after me for money and I haven't a cent!"

"Uncle George might be able to loan you some," Madge said doubtfully. "I don't know—"

"No, I'll not borrow from him when I can't be sure of paying it back," Anne announced with decision. "I think the best thing to do is to tell Mr. Brownell the truth about the formula. Then I'll sell my house to Jake Curtis and try to clear up my debts."

"You're discouraged tonight," Madge said kindly, slipping her arm about the other. "I'm not fully convinced the formula can't be found. What say we have one grand final search tomorrow?"

Anne agreed without enthusiasm. They finished counting the silver and accounted for all pieces save one knife which Madge thought must have been left in the log. Anne put everything away in its place and locked the doors and windows for the night. They went about it in businesslike fashion,

trying not to show that they felt the slightest uneasiness. Nevertheless, both experienced a certain dread of spending the night alone in the house, an insecurity which they could not express in words. The feeling had steadily grown upon them since the discovery of the theft.

Mounting the spiral stairs to the bedroom they shared, the girls clung tightly to each other. They hurriedly undressed and Anne blew out the oil lamp. She made a running dive into bed, snuggling close to Madge who gave her hand a reassuring squeeze. Save for the moaning of the wind, the house was quiet. Almost too quiet. In the dark the girls could easily imagine that someone was creeping up the stairs. Suddenly a door slammed.

"What was that?" Madge whispered.

"It must have been a screen door," Anne returned nervously.

They listened intently for a minute or two but the only sound was the brushing of a tree-branch against the window. Gradually they relaxed and dropped off to sleep. And the next thing they knew it was morning.

"Get up, lazy thing!" Madge ordered, springing from bed and taking all the covers with her. "I feel like a swim this morning."

They slipped into bathing suits and dashed down to the beach. Madge plunged boldly into the cold

water and swam away with powerful crawl strokes. Anne timidly waded out knee depth and stood there shivering.

"Come on, don't be afraid to get your ears wet!" Madge challenged.

Under her direction, Anne lost some of her timidity but she found it difficult to entirely forget her recent water fright. Before the swim ended she was able to float on her back and splash about with some resemblance to a stroke.

The water was too cold to encourage a long swim but it did stimulate two healthy appetites. After a brisk rub down, the girls did justice to a breakfast of fried eggs, bacon, toast and wild strawberries in thick cream.

"And now, let's have a look at that old log," Madge proposed.

She led the way to the place where she had found the silverware. The ground in the vicinity of the log was slightly damp and Madge noticed footprints. She bent down to examine them. Nearly all had been made from her own small shoe, but there were a few indistinct ones, left in the soft earth by a man's tread.

"Here's the missing knife!" Anne cried jubilantly. "You must have dropped it on the trail."

Next the girls carefully investigated the inside of the log but it was empty. They tried to follow the

footsteps leading away from the vicinity, only to lose the trail before they had gone a quarter of the way to the beach.

"I'd give plenty to know who took my silver," Anne remarked as they returned to the house. "And I'd give even more to know if the thief really got away with anything valuable—the formula for instance."

"I doubt it. My own opinion is that it will take a master mind to unearth it."

After the breakfast dishes had been disposed of, the girls set about searching once more for the missing paper. They looked in every out-of-the-way cranny in the house and even poked into the attic; they emptied old trunks and boxes of rubbish. At last, weary and discouraged, they gave up.

"It's no use," Anne said miserably. "If Father ever wrote out that formula, it's gone. The next time I see Mr. Brownell I'll tell him he is only wasting his time to remain here."

"Let's go fishing and forget it," Madge proposed suddenly. "If I think about formulas and silverware and what-not much longer, I'll go crazy. Let's go to Elf Lake on an all-day picnic."

Anne fell in with the plan for she too was tired of trying to solve problems which appeared to have no solution. They agreed to meet at Black Rock at one o'clock since Madge must return home to

acquaint Mrs. Brady with details of the trip. On her way back to the lodge she stopped at the lookout to inquire of Jack if they might use his boat which was kept at Elf Lake.

"Of course," he assured her heartily. "You know you didn't need to ask."

Promptly at one o'clock Madge arrived at Black Rock to find Anne already waiting.

"We'll not need to carry the canoe across the portage," she informed Anne. "Jack left a boat there last week when he was doing ranger work. We'll only have our oars to carry."

The girls paddled until they came to a tiny cove which was distinguished by two large white birch trees, marking the portage trail. There they pulled their canoe out upon the beach and set off through the woods, carrying oars and fishing equipment. The portage was a long mile but the girls were accustomed to hiking and took it at a brisk pace.

Soon they came within sight of Elf Lake which glimmered brightly in the afternoon sun. At first they could find no sign of Jack's boat but when they were about to despair Madge located it under a pile of brush near the water. They quickly launched it and rowed to the far side of the lake, anchoring near a stretch of lily pads.

"Now, old Mr. Bass, just sample my bait!" Madge coaxed.

Time and time again the girls cast into the weeds and lily pads, using all manner of appetizing worms, pork rind and artificial bait but for some reason, their efforts went unrewarded. They changed locations with no better luck.

"The fish in this lake must all have post graduate degrees," Madge complained. "At least, they're too foxy for me."

After several hours under the blazing sun Anne was thoroughly discouraged but Madge would not give up. And then as the sun was sinking low, she was rewarded with a strike. She played her fish deftly and landed him. Anne had no time to applaud for a frisky bass had attached himself to her line at the identical moment.

After that, the fishing was good. The girls became so enthusiastic that they failed to notice how rapidly the sun was sinking. Madge was the first to observe that it was growing dark.

"Anne, we must start back this minute!" she exclaimed. "The sun has set and it will be pitch dark before we get through the portage."

They rowed hurriedly to shore and left the boat where they had found it. Almost at a run they started down the trail. It was far darker in the forest than upon the lake. The path was not distinct. Though Madge had been over it any number of times, she knew it would be difficult to follow.

"Let's run," Anne suggested anxiously.

The oars and string of fish encumbered them and they soon were forced to a slow walk. Before they had gone far into the forest, darkness closed in. Madge took the lead, and more from instinct than sight, kept to the trail. Presently, she noticed that the going was more difficult. Vines and old stumps were always in the way; there seemed no distinct opening through the trees.

"We're lost!" she thought in panic.

She tried to remain calm and not communicate her fear to Anne who was blindly following her lead. She went on for a time but presently encountered such a tangle of bushes and vines that to turn back was the only course. They tried to retrace their steps. Anne was on the verge of tears.

"We'll be here all night," she murmured apprehensively.

"No, we won't," Madge insisted stubbornly. "We'll get out, only I think we're wasting time trying to find the trail. If we cut straight through the woods in the direction we're going we should strike Loon Lake eventually."

Anne who was hopelessly confused in her directions was ready to follow wherever her chum led. Madge tried not to disclose that she too was uncertain. They kept close together, walking as swiftly as possible. Frequently, they tripped over

vines or stumps and once Anne sank nearly to her knees in a muck hole.

"I can't go much farther," she half sobbed.

"Yes, you can," Madge encouraged. "I think I see an opening through the trees. Yes, I do! It's the lake!"

Anne found the strength to continue and soon they emerged at the shore. They looked about and saw that they were less than two hundred yards from the portage trail.

"Well, of all the stupidity!" Madge exclaimed and laughed. "We were only a few steps from the trail most of the time."

"I thought we were in an African jungle," Anne sighed wearily.

They followed the shore until they came to their canoe. Madge insisted upon paddling for Anne was even more tired than she.

"It's fortunate Aunt Maude doesn't expect me back home," she remarked as they pushed off. "Otherwise, she would have a searching party out looking for us."

Both were relieved when they came within sight of Stewart Island for their only desire was to tumble into bed and sleep the clock around. They were still several hundred yards from the landing when Madge stopped paddling and peered intently ahead.

"Anne," she said in a low tone, "unless I'm dreaming, I saw a light just then. Someone is at the island."

Anne turned to look. She too caught the flash of a lantern moving slowly along the shore.

"It must be Jack French or Bill Ramey," she said with an attempt at carelessness. "I'll call."

Her voice carried clearly out over the water but no answering call greeted the "hallo." The light stopped moving, as though its owner had turned to survey the lake. Then the lantern went out.

## CHAPTER VIII

### *A Night Caller*

IT WAS too dark for the girls to distinguish objects either on the water or along the shore, but a moment after the light went out they distinctly heard the sound of oars working in their locks. Apparently, someone was trying to get away from the island before their arrival.

"Let's find out who it is," Madge said in a low tone.

She snatched up the paddle again and sent the canoe skimming through the water. Presently she paused to listen.

"I can't hear a thing now, Anne. Can you?"

"No, the boat must have pulled up along the mainland somewhere. I'm afraid we've lost him."

Anne paddled slowly along the shore, peering toward the dense fringe of trees and underbrush. There was no sign of a boat.

"We've probbaly passed it by this time," Madge said at last. "If the boat has been drawn up into the brush we could hunt all night and never find it."

They cruised about for some minutes but finally turned back toward Stewart Island, convinced that

they were only wasting time. Even after they had landed there, they stood for nearly fifteen minutes on the beach, watching for the mysterious boat to reappear upon the lake.

"He means to lie low," Anne declared wearily. "Let's get something to eat. I'm starved."

"I wonder if the house has been entered again?" Madge considered, as they started up the path carrying their string of fish.

"Well, I hope it isn't turned topsy-turvy. I'm too tired to lift a hand tonight."

They let themselves into the house and were relieved to find it in its usual order. Nothing appeared to have been disturbed.

"Perhaps it was only old Bill Ramey, after all," Anne suggested. "He acts queerly sometimes."

"It wasn't Bill," Madge insisted. "I'm sure of that. It may have been that thief returning for the silver he hid in the log."

"That doesn't fit in with our theory about the formula," Anne pointed out. "We decided that the silverware was only taken to throw us off the track. Why then, would the thief risk coming back for it?"

"I guess he wouldn't. Oh, I give it up. Let's eat!"

She cleaned several of the bass, which soon were sizzling in a pan of butter. The girls ate heartily.

They were too tired to wash the dishes, so stacked them neatly in the sink. When they dropped into bed a few minutes later, they were too weary to even consider that with a stranger prowling about, their situation might not be too secure. Scarcely had their heads touched the pillow than they were asleep.

The girls were awake early the next morning. Insisting that she could not remain for breakfast, Madge started for home. Rounding the point of the mainland not far from the lodge, her attention was attracted to an empty boat which was drifting close to shore.

"Why, that looks like one of ours," she thought.

Drawing nearer, she saw that it was her uncle's skiff. The waves were pounding it mercilessly upon the rocks.

"I'm afraid it's already damaged," she told herself as she fastened the rope to her own boat. "It must not have been securely tied to the dock. I wonder who used it last?"

She decided that it must have been either Clyde Wendell or Mr. Brownell, for her aunt seldom went out on the water and Mr. Brady was always careful. Old Bill had been warned repeatedly to see that the boats were firmly tied, but he was careless.

Mr. Brady was working along the shore when Madge came in with the boat in tow. He met the

girl at the dock, asking where she had found it.

"I noticed the boat was missing this morning," he added. "I told Bill to go out and look for it, but he's been killing time at something or other."

Mr. Brady pulled the boat out upon the sand and turned it bottom side up. Madge watched him as he examined the covering for stone cuts.

"Who used it last?" she asked curiously.

"I'd like to know myself," her uncle returned grimly. "I didn't rent it to any of the guests. Either someone sneaked it out after dark last night, or Bill used it. If I thought he was responsible, I'd fire him. This boat is practically ruined."

"You've discharged poor old Bill three times already," Madge reminded him impishly. "When he tells you his hard luck story, you always take him back."

At this very moment the veteran workman slouched leisurely into view and Mr. Brady promptly hailed him. Old Bill approached warily, knowing from the tone of the voice, that something unpleasant was in store. Confronted with the evidence, he staunchly denied having used the boat the previous night.

"You think I'd go out on the lake after toting stone all day? Not me! I tell ye, a man's dog tired arfter workin' hard from mornin' till night. An' if I had a taken out the boat, you'd heve found it tied

up ship-shape. No, sir, arfter I had me supper last night, I went straight to bed."

He would have continued with a more elaborate denial but Mr. Brady cut him short. Bill went off looking affronted.

To question the guests was a delicate matter, but Mr. Brady was bent upon getting at the bottom of the matter. He politely brought up the subject at the dinner table, and both the chemist and Mr. Brownell insisted that they had not used the boat.

"Someone is telling a whopper," Madge thought. "It wouldn't surprise me if the person who took that boat used it to visit Stewart Island."

Although the question had been put to him in a casual way, Clyde adopted the attitude that he was under suspicion. He sulked about the house the early part of the afternoon, scarcely addressing a pleasant word to anyone. Then, evidently upon sudden impulse, he rented the canoe and set out for Stewart Island.

Mr. Brownell who had been loafing about the lodge the better part of the morning, did not see him leave, but a few minutes later, he too expressed a desire to go out upon the lake. Madge explained that with the skiff damaged, the canoe in use, and Bill hauling stone in the boat, it would be impossible.

"But I must get over to Stewart Island," he protested. "I've put it off too long now."

"Unless you care to swim I'm afraid you must wait until Bill or Clyde return," Madge returned.

She did not wish to help Mr. Brownell reach Stewart Island, knowing that Anne was not ready for his visit, but she had been truthful in saying that there was no way for him to make the trip.

"Anne will have trouble enough with Clyde," she thought. "I imagine he's bothering her about money again."

Mr. Brownell wandered restlessly up and down the beach, watching the lake for a glimpse of the canoe or Old Bill. After a time he sat down on the veranda to read and Madge who had finished her work, brought out the books Anne had loaned her. Until now she had not had an opportunity to look them over. Propping herself in the porch swing, she settled down for an hour of pleasant reading.

She picked up the first volume and her face underwent a distinct change as she read the title of the Kipling book.

"'Kim,'" she repeated to herself. "Strange I never thought of the connection before this! I'm sure Anne said Kim was the last word her father spoke before his death."

She continued to stare at the little volume in her hand. The word seemed to burn deeply into her mind. It must have significance. She recalled Anne had told her the Kipling book was her father's



favorite. Could there be a connection between the hidden formula and the book?

"Anne probably never dreamed of such a thing or she wouldn't have loaned the volume to me," Madge reasoned. "It may be only another wild idea of mine and yet it's barely possible I've stumbled upon a clue."

She held the book up and shook it but nothing fell to the ground. Slightly disappointed, she began a systematic search, turning the pages one by one. She failed to find a paper of any description and there was not the slightest trace of writing on the margins or fly leaves.

Madge decided that she had made a mistake and tossed the book impatiently aside. Her interest in reading had vanished. She gazed meditatively out across the lake. Then her face brightened and she snatched up the Kipling book again.

Why hadn't she thought of it before? When Mr. Fairaday had attempted to tell Anne where the formula was hidden he had broken off with the words: "Written in secret—" and kept repeating "Kim." Perhaps he had tried to say: "Written in secret *ink*." Wasn't it possible that he had endeavored to convey the idea that the important message was written on one of the fly leaves or the page margins of "Kim"?

Overcome with enthusiasm for what she con-

sidered a most brilliant deduction, Madge broke forth in a little war whoop. She stopped short as she heard someone laugh. She had entirely forgotten Mr. Brownell.

"Well, well," he remarked dryly, "that book must be interesting to affect you like that!"

Before Madge could prevent it, he moved over to the swing and curiously picked up the book she had been reading. Her face was the hue of a ripe tomato.

"I guess I'll just take this along with me," he said teasingly.

"Oh, no!" Madge exclaimed and then added hastily: "You see, it's a borrowed book. I—I'm not through with it myself."

Mr. Brownell laughed but he continued to study the book.

"When you're through with it, I'd like to have it," he said. "I've always wanted to read 'Kim'."

With that he dropped the book into Madge's lap and vanished into the lodge. Scarcely had the door closed behind him that she snatched up the little volume and bore it triumphantly to her bedroom.

"Sorry, Mr. Brownell," she chuckled, "but you'll never get this book. Tonight I mean to take it with me to the island. And here's hoping that when the pages are heated, the secret will be revealed!"

## CHAPTER IX

### *A Significant Title*

MADGE was impatient to tell Anne her new theory regarding the missing formula but it was not easy to get away early that evening. Bill did not return with his load of stone until nearly dark, and Clyde Wendell, who had a habit of being late for meals, failed to appear until supper was nearly finished. Then he lingered over his coffee long after the others had gone outside. When he finally joined them on the veranda, Madge snatched the dishes from the table and had them in and out of the pan in a twinkling.

It was growing dark as she flew to her room for the things she meant to take with her to the island. She wrapped up a small bundle and tucked "Kim" under her arm.

Mr. Brownell and the chemist were arguing about something but they broke off as she crossed the veranda.

"That book must have a fascination," the former remarked jokingly. "Do you sleep with it under your pillow, Miss Sterling?"

"What book?" Clyde asked.

She pretended not to hear but Mr. Brownell supplied the title.

"'Kim,'" the chemist repeated. "Did I understand you correctly?"

Madge did not care to be drawn into the conversation nor did she wish to answer questions about the book. Without waiting for Mr. Brownell's reply, she hastily made her way down to the lake.

Anne was waiting for her when she reached the island and immediately plunged into an account of Clyde's afternoon visit.

"He made a dreadful scene, Madge. He said he'd give me just two days and if I don't turn over five hundred dollars by that time, he'll bring court action. I'm so worried I don't know what to do."

"Do nothing," Madge advised. "He knows he can't get anywhere if it comes to a legal fight. He's only trying to bluff you, Anne. Sometimes, I think it wasn't the money that brought him here at all."

"So do I. All the time he was talking with me this afternoon, he kept looking around and sort of studying things."

"Did he seem particularly interested in the library?"

"Why, he asked me if I had considered selling my books as a means of raising money. I told him I didn't think they would bring much."

"He didn't ask you about that Kipling book you loaned me, did he?"

Anne shook her head. "Why?"

Madge lost no time in explaining her theory of the connection between the title and the words Mr. Fairaday had spoken at the time of his death. She half expected Anne to laugh at the idea, but instead, she became excited.

"Madge, you're nothing less than a genius! Why didn't I think of that myself?"

"It's only a hunch. I may be wrong."

"Everything fits in beautifully. 'Kim' was Father's favorite book. And another thing, he was always interested in codes, secret inks and the like. During the war he worked for the government, deciphering messages which were thought to have been composed by spies. He was especially interested in secret inks."

"Then we may be on the right track," Madge declared enthusiastically. "The only way we can tell is to try to bring out the secret writing, if there is any."

"That's easy to do. Let's go to the laboratory right now and see what we can do."

With high spirits they raced up the stairs to Mr. Fairaday's workroom. Anne brought out an alcohol lamp which she lighted.

"I don't know the first thing about heating the

pages," Madge confessed. "Aren't you afraid we'll burn them?"

Anne shook her head. She had aided her father with any number of minor experiments and knew how to handle laboratory apparatus. However, she was so excited and hopeful that her hand trembled as she held the first fly leaf above the flame. She moved it slowly back and forth.

"Nothing seems to be coming up," Madge observed in disappointment.

"We're only starting."

Anne worked patiently, heating the blank pages and the front and back of the book. When the final sheet did not reveal the secret, her confidence fell. Madge suggested that they try the margins and they took turns warming the printed pages. At length Anne passed the last sheet over the lamp. They watched with bated breath. Nothing came up.

"Oh, Madge, I'm so disappointed I could cry," she wailed, sinking down into a chair. "I was so sure we were right."

"So was I."

"This book was absolutely our last hope. If Mr. Brownell comes here tomorrow I must tell him the truth. I've kept him waiting so long he'll be justified in feeling I've tricked him. Oh, dear! Why did I get into such a position?"

"It wasn't your fault." Madge relapsed into thoughtful silence. At length she said: "I think Clyde is trying to sell Mr. Brownell a formula of his own."

"I suppose he'll succeed where I have failed. His formula may not be half as good as Father's, yet if Mr. Brownell learns there is no hope of getting it he may deal with Clyde."

Madge acknowledged the truth of this. She had hoped matters might work out to Anne's advantage but luck had never been with her. To admit defeat seemed the only course.

It was nearly midnight and the girls were tired as well as discouraged. They put aside the apparatus and went to their bedroom, leaving the book lying on the laboratory table. Few words were spoken as they prepared for bed. Anne blew out the light and soon was asleep.

Madge rolled and tossed and remained wide awake. Try as she would, she could not take her mind from the perplexing problem of the formula. She had no real hope of working out a solution yet she kept turning the matter over and over in her mind. Then like a flash, the answer came!

"Anne! Anne!" she cried jubilantly, shaking her chum rudely by the shoulder. "I've thought of it at last!"

## CHAPTER X

### *An Unsatisfactory Test*

ANNE rolled over in bed and groaned.

"What did you say?" she murmured drowsily.

"Wake up, sleepy head," Madge said, shaking her again. "I've had another inspiration about the formula."

At the word "formula" which was magic to her ears, Anne sat upright, ready to listen.

"We've been hopeless duds trying to bring out the secret writing by heating the pages of the book!" Madge declared.

"And you awakened me to tell me that? Of all the—"

"I'm not through. Remember, you said your Father knew a great deal about secret inks and the like."

"He was a government specialist," Anne corrected. "He probably knew as much about secret inks as any man in Washington."

Madge nodded eagerly.

"Exactly. And here we've been working on the theory that he would use the most simple means of hidden writing. Why, you can write with milk and

bring it out by heating the paper. Any school child knows that."

"Father always had an aversion to the obvious thing too," Anne declared, catching her friend's trend of thought. "He probably used the very latest method of secret writing."

"That's the conclusion I reached," Madge announced eagerly. "I'm willing to wager that the formula is written in 'Kim' if only we can find the right method of bringing it out!"

"I'm sure I don't know the way," Anne returned. "You can't find that sort of information in books either—that is, not the latest processes."

"You don't know anyone who might help us?"

"Clyde Wendell, if he would."

"Let's count him out. He wouldn't help a blind man."

"Then I fear—oh, wait! I just thought of a man who worked with Father in the Washington bureau. He knows everything about codes and ciphers and secret inks."

"Can you reach him?"

"Why, I could write to Washington. I believe he's still with the government."

"That would take ages," Madge protested. "We must have quick action or Mr. Brownell will leave. Why not telegraph?"

"I can," Anne agreed instantly. "Why, where are

you going?" she demanded as Madge slid out of bed.

"I'm going back to the laboratory after 'Kim.' It would be just our luck to have it stolen during the night. No use taking chances."

Anne would not permit her to go alone so together they stole down the dark hallway. The floor creaked beneath their feet and the light from the lamp made weird shadows dance on the plaster walls.

To their relief they found the book where they had left it. For the remainder of the night they slept with it under Anne's pillow.

At the first sign of dawn they arose and dressed. They planned to go to Luxlow as soon after breakfast as they could find means of transportation and the question arose as to what should be done with the book.

"I don't like to leave it here while we're gone," Anne said. "The house has been entered once and we saw a prowler around at night. Why don't you take it back to the lodge?"

"I'd prefer not to have the responsibility."

"Do keep it, Madge. I'll not have a comfortable moment if we leave it here."

Unwillingly, Madge allowed herself to be persuaded. Shortly after eight o'clock, they locked the house and crossed the lake to the Brady lodge. Neither Mr. Brownell nor Clyde Wendell were

abroad for they were late risers. The girls went to Madge's room for her coat and hat and while there decided that for the time being "Kim" would be safe in the lower bureau drawer. They covered the book with a layer of clothing.

"No one ever comes in here save Aunt Maude and she wouldn't think of disturbing anything," Madge said.

How to get to Luxlow was the next problem for Mr. Brady had taken the car away early that morning. However, learning that one of the rangers was driving in, they received permission to ride with him. Madge rather wished that Jack might have been the one to take them but he was busy surveying a new road which the government intended to put through the forest.

Enroute to town the girls busied themselves with the telegram they intended to dispatch to the man in Washington. Anne had found his address on an old envelope in her father's files. It was not easy to explain what they wanted to know in a few words without sounding utterly ridiculous. After several trials, the message finally suited them. Arriving at Luxlow, they sent it off and purchased supplies which Mrs. Brady had requested. The last item on the list she had given Madge, read: "magazines for Bill."

"He always wants the cheapest kind," she told

Anne. "I have a notion to take him a few high-brow ones for a change."

"He'll never forgive you if you do."

They sought a street stand which displayed magazines of all type. With considerable embarrassment they selected a half dozen of the melodramatic sort and Madge actually blushed as she paid the sales-girl.

"The next time, Bill buys his own trash or he goes without!" she fumed. "Did you see the pitying look that girl gave us? She thought we wanted them for ourselves."

They walked slowly down the street, Madge carrying the magazines so that the jackets would not be noticed by the passersby. They were within sight of the ranger's parked automobile when Anne heard her name called. She turned and saw Jake Curtis.

It was too late to retreat. They could only wait and face the music.

"I went out to Stewart Island last week to see you, Miss Fairaday," the man began in an unpleasant tone. "You were gone."

"I must have been at the Brady lodge," Anne replied uneasily. "Or perhaps it was the day we went fishing. If I had known you were coming—"

"You'd have been away just the same!" the man finished harshly. "Well, I warn you it will do you

no good to try to avoid me. I mean business. The mortgage must be paid by the first."

"This isn't the first," Anne reminded him. "I have several days yet."

"Not to sell the house, you haven't. I'll give you just twenty-four hours to decide what you want to do. I'll wipe off the mortgage and give you five hundred dollars for the house and island. But the offer only holds until tomorrow noon."

"It's robbery!" Anne protested.

"Take it or leave it," he retorted, and turning, walked away.

## CHAPTER XI

### *The Secret Hiding Place*

"My! My! Is Jake Curtis important?" Madge mocked. "Take it or leave it! I wish you had told him to jump in the lake!"

"I fear I'm at his mercy," Anne returned in a disheartened tone. "What can I do in twenty-four hours? I can't borrow enough money to pay off the mortgage. And if I sold the house and island at public auction it probably wouldn't bring enough to get me out of debt."

"Jake would see to that," Madge said feelingly. "He has underhanded ways of managing things. But don't take it so hard, Anne. We'll find some way to best him."

"The formula was my only chance of raising money and we couldn't possibly unearth it in twenty-four hours."

"That man in Washington may wire right back."

"And again, he may never answer," Anne added gloomily. "Oh, well, it does no good to moan. Let's go back to the car."

The girls reached the Brady lodge in time for a late luncheon. Learning that Mr. Brownell had gone

fishing again and that Clyde Wendell had not been seen since breakfast, Madge persuaded Anne to remain for a few hours.

They had lunch and then sat on the veranda. As usual the conversation turned to the missing formula and to the book which they hoped would disclose the secret. Madge brought it from the house and they looked at it again. While they were pouring over the pages, Mrs. Brady came outside to suggest that Madge take the newly purchased magazines to Bill's cabin.

"He's laid up with rheumatism again today," she explained, "and I know he'll appreciate something to read."

"Rheumatism, like fun!" Madge laughed as she arose to do her aunt's bidding. "I notice his attacks always come on the days when Uncle George has planned a hard day's work. You're both too easy on him."

She accepted the magazines, and with Anne, who still had the book in her hand, walked a short distance through the woods to Bill's cabin. From afar they glimpsed the old workman smoking his pipe on the porch but he quickly vanished inside as he saw them coming. When they knocked, a muffled voice bade them enter.

They entered the room to see Bill stretched on his bunk, his face twisted with pain.

"Thet you, Miss Madge?" he mumbled, making an exaggerated effort to lift himself to a sitting position. "If Mr. Brady sent you to find out how I be, you kin tell him I ain't no better. My back's nigh to killin' me. I didn't git a wink o' sleep last night and this mornin' seems like me poor old body—"

"Never mind," Madge interrupted. "Uncle George didn't send me. I brought these magazines for you."

Bill's face brightened. He swung his feet to the floor with alacrity, then remembering his ailment, groaned and told Madge to leave the magazines on the table.

"I won't be doin' much readin' fer several days yet," he mumbled. "I'll jes' lie here quiet like and try to git me strength back."

The girls soon left, but mischievously hid themselves behind a tree only a short ways from the cabin. Before long, Old Bill's tousled head was thrust cautiously out the door. Seeing that the coast was clear he took up his seat in the sun and soon was lost in the depth of a bloodcurdling detective story. The girls stole quietly away.

"It's always that way," Madge declared. "For every honest day of labor he does, Bill rests six! I guess at that we couldn't get along without him."

Taking a different trail through the woods, the



girls presently came to a newly constructed two-room log cabin.

"Uncle George plans to rent it out later in the summer," Madge explained. "It's all finished now."

"Is it nice inside?"

"Lovely. I'll open it up and show you."

Madge dashed off through the woods, returned in a few minutes with the key, which after a few unsuccessful turns, unlocked the cabin door. The rooms had been furnished with rustic furniture that Mr. Brady had made himself. The unpainted log walls gave off a pleasant, fresh odor. Madge pointed out the huge stone fireplace.

"Bill will be proud of this until his dying day. He can tell you the number of stones in it too."

"How did you ever keep him at it long enough to get it done?"

"It was a problem. Uncle George supervised the work, of course. Even then, Bill made several mistakes in placing the stones. See—" she indicated a deep ledge, well-hidden up the chimney. "No one knows why he did that. The chimney may not draw right now."

"Madge, how long before this cabin will be used?" Anne asked suddenly.

"Probably not for a month or so. Why?"

"I was thinking—this ledge is made to order!" Anne glanced at the book she still carried in her

hand. "We must hide 'Kim' somewhere. Why wouldn't this shelf be an ideal place?"

"Perhaps it would. No one ever comes here now the cabin is finished. The key is kept in the kitchen cupboard and the windows are always locked from the inside. The only danger might be that someone would start a fire to test the chimney. And if Uncle George should decide to do that, I could rescue the book."

"Let's hide it here then, Madge. Somehow, I don't feel that it is very safe in your bureau drawer."

"Neither do I, with so many guests around. But I'm not convinced this is such a safe place either. I'd feel better if you took the book back home with you."

"No, I'd much rather you kept it. And we can't ask for a better place than this shelf. Who would think of looking here? It's well hidden and the book just fits the space."

Anne thrust an exploratory hand up the chimney. As she observed, the ledge seemed to have been built for "Kim."

"I suppose we may as well leave it there," Madge said, a trifle reluctantly. "At any rate, the book will be safer than in my bureau drawer."

They left the cabin, locking the door behind them. Madge cast an uneasy glance about the clearing. "You—you didn't hear anything?" she asked.

"Hear anything? Why, no. What do you mean?"

Madge did not reply immediately for her sharp eyes were searching the line of trees which circled about the little cabin. Gradually, the tense lines of her face relaxed.

"Just as we came out, I thought I saw someone—right close to the cabin. For a minute, I was sure I heard a stick crackle."

"Imagination!" Anne laughed. "The responsibility of keeping the book is making you nervous."

"I guess so. Still, this hiding place doesn't entirely suit me. Let's go back and get it!"

"Nonsense!" Anne protested. "The place is all right. No use treating that book as though it were a bag of gold. Come along. I must be getting on home."

Reluctantly, Madge permitted herself to be led away.

"All right," she gave in, "but if anything happens, don't blame me!"

## CHAPTER XII

### *The Awaited Message*

FOR the first time in many nights Madge slept at home. Although she would not have admitted it, "Kim" was responsible for her reluctance to return with Anne to Stewart Island. She did not retire until after the guests had gone to their rooms, and then tossed restlessly. Finally she dozed off, only to be awakened by an unusual sound.

She sat up in bed. The house was quiet but she was sure she had heard someone stumble over a chair in the kitchen. Ordinarily, she would have gone back to sleep. Instead, she thought of the key in the cupboard. What if it were stolen?

Slipping into a dressing gown, she stole quietly downstairs. On the bottom step she paused and listened. She heard someone moving about. Then distinctly, but very softly, a door closed.

Now thoroughly alarmed, Madge hurried to the kitchen. Groping about, she found a lamp and lighted it. To her relief, the key still hung on its hook in the cupboard.

"My imagination is getting the best of me!" she chuckled. "I'd have sworn someone was down here."

I more than half expected the key to be gone."

She returned to her bedroom, taking the key with her. Placing it carefully under her pillow she jumped into bed and soon was fast asleep.

In the morning her fears seemed ridiculous, so when she made her bed, she returned the key to its old place in the kitchen.

Directly after breakfast, Mr. Brady left the lodge, saying that he must examine some timber land and would not return until nightfall. Mrs. Brady was confined to her room with a headache and Mr. Brownell had taken one of the boats and rowed away toward Stewart Island. That left only Clyde who loitered about the kitchen while Madge fried doughnuts.

"You're not a bad cook," he complimented, helping himself to a crisp, brown fried cake. "This one tastes a little soggy though."

"I'd think it would after you've eaten six," Madge observed.

She was glad when he finally left the kitchen. Dipping the last doughnut in sugar, she too slipped outside and was just in time to sight Jack French paddling toward the beach in his canoe.

"Hello, Jack," she greeted, "I haven't seen you in days."

"Well, the government didn't plant us in the forest for ornaments, you know," he replied cheer-

fully. "I just returned from Luxlow where they gave me a message for Anne. Since you two stick together like burrs I thought I might find her here."

"I haven't seen her today," Madge returned, an eager note creeping into her voice. "It isn't a wire from Washington?"

"I can't say, but it is a telegram. It may be important so I'll be paddling along."

"I'm going over to the island before long. If you like, I can take the message."

"I know you want to find out what it's all about," he teased, handing over the yellow envelope. "Oh, well, I'll be glad to be saved the trip. On your way."

Madge lost no time in going to the island. She marched into the kitchen where Anne was working, waving the telegram triumphantly.

"It's not an answer to our wire?" Anne demanded hopefully.

"It must be. Open it quick before my nervous system explodes!"

Anne's hand shook so that it was difficult for her to rip open the envelope. Her face was a study as she scanned the message. Then she fairly glowed with pleasure.

"Oh, it is from that Washington man!"

"What does he say?"

"Listen to this! He thinks the formula may have

been written on the blank pages of the book with just ordinary water."

Madge stared incredulously. "Water?" she echoed.

"Yes, I recall now that Father once mentioned the same. Strange it slipped my mind."

"I never heard of writing with water. It doesn't seem possible."

"I believe the method was discovered during the late war," Anne explained. "Anyway, a secret message can be written on certain types of paper merely by using a clean pen and water. The water disturbs the fibers of the paper—it isn't visible to the eye, of course."

"Then how could the writing be brought out?"

"It's all explained here," Anne said, offering the telegram. "You insert the paper in a glass case and shoot in a thin iodine vapor which settles into all tissues disturbed by the pen. He's sending complete instructions by mail."

"It sounds dreadfully complicated."

"Not to me. I've helped Father with other experiments and I know how to go about this. Let's get the book now and see if we can bring out the secret writing."

"Shouldn't we wait for complete instructions?"

"Oh, I can't wait! So much depends on getting the formula within the next few hours. We'll not

ruin the book. I'm sure I know just how to go about it."

Madge gave in and they made a quick trip to the Brady lodge which seemed strangely quiet and deserted.

"Aunt Maude must be sleeping," Madge observed. "Clyde was here when I left but he appears to have taken himself off."

They let themselves into the kitchen. Madge went directly to the cupboard for the key to the new cabin. It was not on its usual peg.

"Don't tell me it's lost," Anne said nervously.

Madge did not answer immediately. Then her face relaxed.

"No, it dropped into this cup. Gave me a scare for a minute."

In relief, they hurried to the newly built cabin. Madge unlocked the door and they entered. Everything appeared exactly as they had last seen it.

Madge went confidently to the fireplace and ran her hand up to the hidden ledge. A startled expression passed over her face. She groped about the ledge a second time, more carefully than before.

"What's the matter?" Anne asked, though she read the answer in her friend's tense face.

"It's gone!" Madge answered. "Someone has stolen our book!"

## CHAPTER XIII

### *The Missing Book*

"GONE," Anne echoed blankly. "Oh, it must be there."

"It isn't," Madge insisted. "Oh, I knew something would happen to it!"

"Let me look."

Madge stepped back to permit Anne to take her place at the chimney. Both were trying desperately to remain calm, attempting to make themselves believe the book had only been misplaced.

"You're right, it's not here," Anne murmured, after feeling carefully along the ledge. "You don't suppose either your aunt or uncle could have put it away?"

Madge shook her head doubtfully. A conviction that the book had been deliberately stolen was growing in her mind.

"We can soon find out," she replied.

They rushed back to the house. Mrs. Brady had finished her nap and was sewing. The girls found her in the living room and incoherently poured out their story.

"Now, don't get excited," she advised kindly.

"The book will turn up. Mr. Brady hasn't been near the cabin, but one can't be sure about Bill. He's into everything. Why not question him?"

Frantic with anxiety, they hurried to the old workman's cabin. He denied taking the key.

"What would I be doin' with it anyhow?" he demanded crossly. "After buildin' that fireplace and luggin' all that heavy stone, I'd be right well pleased if I never saw the place agin."

"Then who did take the key?" Madge fairly wailed. "Someone used it and put it back in the wrong place."

Bill shrugged and would have retreated into the cabin had not Madge halted him with an abrupt question.

"Have you seen anyone prowling about the new cabin or acting suspiciously? I know you're something of a detective. Perhaps you noticed Clyde Wendell or one of the guests acting strangely."

Bill could not resist this direct appeal to his vanity. He assumed an important pose and his brows came together in a thoughtful pucker.

"I wasn't aimin' to mention it," he informed regally, "'cause Mr. Brady's warned me mor'n once not to talk about the guests—"

"This is different," Madge urged impatiently. "Tell us everything. It's very important and time means everything!"

Bill's blue eyes opened wider. Here was something which smacked of mystery. He decided to make the most of it.

"I been watchin' that guy Wendell fer a long time," he reported. "My suspicions was aroused when he kept tryin' to pump me."

"What sort of questions did he ask?"

"Most everything. About the fishin' and the like. He asked about whether Miss Fairaday stayed alone nights and if she'd sold any of her books and things. He'd pester me when I was tryin' to work on the new fireplace. Come to think of it, he even asked me where the key to the cabin was kept!"

Bill had intended to tell a good story. He was surprised to find that by cudgeling his memory he had no need to call upon imagination to furnish interesting details.

"When did Clyde ask about the key?" Madge questioned.

"Lemme see," Bill scratched his head thoughtfully. "Las' night."

It was all clear to Madge now. The book had been hidden only the previous afternoon. She had sensed then that someone was hiding in the bushes near the cabin. Undoubtedly, Clyde Wendell had witnessed everything.

"Anne, Clyde was after your book from the very first!" she cried. "Probably his own formula is

worthless, and he hoped to get possession of your Father's work and claim it as his own."

"But if he saw us hide the book, why didn't he take it last night?"

"I think he did try. I heard someone in the kitchen during the night. When I went down to get the key, he must have heard me coming and ducked into his bedroom which is on the first floor. Oh, if only I'd kept that key instead of returning it to the cupboard!"

"It was all my fault. I chose the hiding place."

"Clyde won't get away. We'll make him give the book back."

Old Bill had been listening attentively to the conversation which he only partially understood. Now he decided it was time to add his startling contribution.

"Guess you'll have to ketch him first. He checked out mor'n an hour ago."

"Checked out?" Madge asked sharply.

"He cleaned out bag and baggage while you was over to the island. I offered to row him across the lake but he said he'd do it himself. Guess he was afraid he'd have to give me a quarter."

"Which way did he go, Bill?"

"He said a car was to meet him across the lake and take him on to Luxlow. I would have watched only I was snowed under with work."

"We must go after him! Bill, get over to the look-out as fast as you can and ask one of the rangers to come here. Get Jack if he's there. Tell him it's urgent."

Bill moved away with alacrity and the girls flew to the house to acquaint Mrs. Brady with the startling news. As Madge had guessed, she knew nothing of the chemist's departure. A survey of his room disclosed that he had taken all his luggage. He had gone without paying his bill.

"If only your uncle were here!" Mrs. Brady expressed indignantly. "And where is Mr. Brownell?"

"You saw him this morning, didn't you, Anne?" Madge asked.

"Why, no," the other returned in surprise. "He never came to the island unless it was after I left."

"Men are always gone when you need them!" Mrs. Brady exclaimed impatiently. "The best we can do is to telephone to Luxlow and try to have someone stop Clyde there."

She rushed away to the telephone and just then the girls saw a boat rounding the point of the mainland. Mr. Brownell drew up to the wharf. His face brightened as he saw Anne, but realizing that something was amiss, he made no attempt to engage her in conversation.

A few minutes later Bill returned with Jack French in the latter's canoe. The ranger had gleaned

most of the facts from the old workman. He asked Madge and Anne only a few, terse questions. Mr. Brownell listened intently to the excited discussion.

"So Wendell got away with the formula?" he broke in. "I knew there was something queer about the whole deal but I couldn't figure it out. Ranger, I'll pay you well if you bring him back."

"I'll do what I can," Jack told him quietly, "and pay doesn't enter into it. We're not sure which way he went."

"Even if he did say he was going to Luxlow, I'd guess he headed for Bryson," Madge interposed. "If he reached there by afternoon he could get a train out for New York. His Luxlow connections would be very poor."

"He was askin' me about the Elf Lake portage only yesterday," Bill volunteered.

"But if he did go the other way, we'll lose him," Anne said anxiously, as the ranger moved toward his canoe.

"I'm striking for Elf Lake," Jack said crisply. "Mr. Brownell, you go to Luxlow and try to head Clyde off there. Bill can drive you in."

The plan was instantly adopted. Jack sprang into his canoe but Madge was directly behind.

"Let me go too! You can make faster time with two paddling."

Jack hesitated briefly, then nodded. Madge slid

into the bow and caught up a paddle. Anne gave the canoe a shove, wading far out into the water.

"Oh, I hope you catch him!" she shouted. "Paddle for all you're worth!"

Jack and Madge cut directly across the lake, taking a course straight as a die. Madge realized that to overtake the chemist they must travel at double his speed. She had a muscular arm and made each stroke count. Several times the ranger warned her to take it easier.

They passed Black Rock, coming at last to the first portage marked by the birches. Abandoning the canoe they started unencumbered through the forest, for Jack knew where a Forest Service canoe had been hidden at Elf Lake. Twice he paused to examine the trail.

"He came this way all right."

Emerging from among the trees at Elf Lake, they scanned the water. There was no sign of a boat or canoe. Jack frowned. Apparently, the chemist had traveled fast.

A moment later, the frown changed to a distinct scowl as he searched the bushes in vain for the hidden government canoe. Almost at once he noted the long marks on the sand, disclosing where it had been dragged to the water.

"Clyde's made off with our canoe! Now we are in it!"

Madge's eye fastened upon an unpainted row boat abandoned upon the sand.

"It's a regular tub and probably leaks like a sieve," she announced, "but it's our only hope."

They found the oars and quickly launched the boat. All of Madge's dire predictions were found true. She bailed steadily to keep the boat afloat.

"We're losing time," Jack said gruffly. "Wendell has a fast canoe now."

"But he's a dub at paddling," Madge added hopefully. "We have a chance of overtaking him at the Rice Lake portage."

"It's a short one and we're a good ways behind."

The prospect of portaging the boat was discouraging. They both knew that unless they overtook the chemist by the time he reached Rice Lake, they likely would lose him. Once he had covered the second portage, a short paddle would take him to Bryson, a city of sufficient population to offer protection.

"Look here," Jack said as they grounded the boat at the extreme end of Elf Lake. "We'll never overtake him if we try to tote this old tub. I know a shortcut through the forest but it's hard going even without dunnage. What do you say?"

Madge hesitated. She realized that if they left the boat behind, they must overtake Clyde at the end of the portage or lose him entirely.



"It's a long chance," Jack said, reading her thoughts, "and the trail is too hard for you."

Madge shook her head stubbornly.

"No," she returned with firm decision. "I'll manage to keep up. We'll leave the boat behind and try the shortcut!"

## CHAPTER XIV

### *The Shortcut*

JACK led Madge a short distance down the shore. After surveying the locality intently to be certain of his bearings, the ranger parted the thick growth of bush which fringed the water, and they plunged into the forest. At first they followed a thinly worn path, but presently thorny vines and underbrush impeded their progress. It was unpleasantly warm; mosquitoes and insects were a torment.

Once Jack slackened his pace and looked back at his companion but Madge urged him on. She knew that everything depended upon speed. Rather than hold Jack back she would drop by the wayside.

She managed to keep up with him, never uttering a word of complaint, but when at last they came within sight of Rice Lake she felt that she could not have continued a hundred yards farther. Emerging from the forest they paused to survey the lake. There was no sign of a canoe or a boat.

"Do you think we're too late?" Madge asked.

"Hard to tell," Jack returned briefly.

They hurriedly made their way along the muddy shore toward the point which marked the end of

the portage Clyde Wendell must have taken. Jack studied the soft ground along the shore but the only footsteps visible had been made many days before. They walked a few steps down the portage and paused to listen. Only the wild cry of a bird greeted their ears. No broken twigs or bushes disclosed that anyone had passed along the trail that day.

"Either we're here ahead of him, or he didn't come this way," the ranger said in a low tone.

Madge sank down on an old log to rest. The ranger stood beside her staring meditatively down the trail. Suddenly he straightened, and Madge, hearing the same sound, looked quickly up. She stifled the exclamation upon her lips.

She could plainly hear the crackle of twigs underfoot. Someone was coming down the trail! Madge quietly arose and looked questioningly at the ranger. His expression had not changed.

Then through the trees they glimpsed Clyde Wendell. He was staggering under the burden of his canoe, and with head bent low could not see the two who awaited him in the clearing.

"Hello," Jack said challengingly. "We've been waiting for you."

With an exclamation of startled dismay, the chemist straightened and allowed the canoe to slide to the ground. He faced the two defiantly.

"Well, what do you want? I'm on my way to Bryson."

"So I observe," Jack commented dryly. "What are you doing with the canoe?"

"I only borrowed it. I'd have sent it back when I got to Bryson."

"It isn't considered wise to borrow government canoes. But we'll let that pass for the time being. Hand over the book!"

"What book?" Wendell countered.

"The one I see sticking out of your hip pocket."

The chemist's hand went involuntarily to his pocket but he faced Jack with blazing eyes.

"I'll not hand over what belongs to me."

"It's Anne's book!" Madge cried for she had seen the cover. "Clyde Wendell, you did steal it!"

The chemist half turned as though to make a dash back over the trail he had just come, but the ranger caught him firmly by the shoulder and wheeled him about.

"Oh, no you don't! Hand it over or I'll take it by force."

Wendell looked searchingly at the ranger. "See here," he said in a conciliatory tone. "I'll pay for the book and the canoe too. I meant no harm. I only want to catch my train at Bryson. You see, I picked up the book by accident—"

"You'll catch no train today," Jack interrupted

bluntly. "You're going back to Loon Lake. Incidentally, there's a matter of a board bill to settle. Now hand over the book!"

Reluctantly, the chemist relinquished it. Jack passed it on to Madgé who hastily examined it to see that no pages were missing.

"You knew it contained the formula," she accused.

"That's the wildest accusation yet!" the chemist laughed derisively. "You and that Fairaday girl have built up a pretty story which you've kidded yourselves into believing is true. Fairaday never owned a formula. It was an obsession."

"Move along!" Jack ordered. "Walk ahead of me and don't try any tricks."

Madgé followed close behind. She was highly elated at having regained possession of "Kim." Yet what if Anne should fail to bring out the secret writing? Clyde seemed so confident they would not succeed.

"We'll find some way to reveal the writing!" she resolved. "At any rate, I'll not worry until after we've made another laboratory test."

## CHAPTER XV

### *What The Book Revealed*

MIDNIGHT lights burned brightly in the Fairaday laboratory. A group of tense watchers, Madgé and Mr. Brownell, Jack, and Mr. and Mrs. Brady, stood watching Anne who was busy at the work table. Clyde Wendell, guarded by a forest ranger, sat propped carelessly back in his chair, a look of amused contempt on his face.

"Well, I'm afraid it's a failure," Anne said in a subdued tone. She smiled bravely but her face was wan. "We've tested each page except the back cover."

Jack looked accusingly at Wendell.

"You could tell us how to bring out that formula if you would!"

"Perhaps, if there were a formula," the chemist retorted. "Now that this nonsense is over, am I free to go?"

"You are not."

All eyes focused upon Anne as she gave the final sheet the chemical test which had been applied to the other pages. As she removed it from the iodine bath a few minutes later, Madgé, who was close at

her friend's side, bent closer. Scattered lines, at first indistinct and unconnected, gradually as if by magic, lengthened and conformed into written characters.

"It's the formula!" she cried exultingly.

Mr. Brownell moved nearer. His face, passive until now, became animated. He studied the page which Anne held up for his inspection and then said quietly: "It's the genuine thing. Miss Fairaday, I congratulate you."

For a few minutes Clyde Wendell was forgotten. When Madge looked at him she saw that he had lost his arrogant assurance. He arose and with a gesture of submission faced Jack.

"You win. I didn't think Miss Fairaday could bring out the writing. I suppose this means prison for me. I'm ready to leave whenever you say."

"Why did you do it?" Madge asked. "Can't you explain?"

For the first time, the chemist appeared slightly ashamed.

"It's a long story," he said slowly. "Mr. Fairaday and I never clicked very well. He didn't trust me and I resented it. At first I helped him with his rust prevention experiments, then he began to work in secret. I guessed that he had made an important discovery. I watched him and learned that he had written the formula in that book."

He indicated the dismantled "Kim," smiling wryly.

"Before I had a chance to read the formula, Mr. Fairaday discharged me. I found another job. Then three months ago I lost it. I thought I'd develop a rust prevention formula of my own because I was hard up for money. I found I couldn't do it. Then I read of Mr. Fairaday's death and knowing that he had never done anything with his formula in a commercial way, I decided to come here and see if I could get it. You know the rest."

"Then you were the one who entered the house that night?" Anne demanded. "You were searching for the book."

"Yes, I wasn't after the silver. I took that merely to throw you off the track. I'm not a common thief. I don't know what made me try to steal the formula. When a fellow's down and out—broke—well, I guess things look different."

Anne, Madge and Jack held a private conference. Presently, Anne turned again to Clyde.

"I've decided not to testify against you," she said. "I'm sure Father wouldn't want me to. I have the formula and that's all that really matters. I believe you're sorry for what you did."

"I am sorry," the chemist mumbled, avoiding her eyes. "You're more decent than I deserve."

"As far as the canoe is concerned, the boys

will be willing to drop the charge," Jack added.

"And Aunt Madge just said she wouldn't press the board and room bill," Madge interposed. "You can pay it later."

"You're free to go," Jack told him. "Clear out and be glad you got off so easily."

After the chemist had left, the atmosphere became more friendly. Anne refused to talk business that night but the following day she conferred with Mr. Brownell and to the delight of her friends sold the formula for a sum which guaranteed her a modest income for life. Her first act was to pay off the mortgage on her house and island, and then, to Jake Curtis' bitter anger, she refused to even discuss a sale with him. Mr. Brownell had taken a great liking to Loon Lake and upon learning that Anne intended to live with an aunt in the city, he offered her a price for her property which left her quite dazed. Madge urged her to sell, and after brief negotiations, she arranged all details of the transaction to her satisfaction.

With business matters cleared away, Anne spent a few weeks at the lodge before leaving for the east. The days were crammed with good times and it was difficult for the girls to say goodbye.

"I owe everything to you," Anne said for perhaps the hundredth time, as they stood at the railway station awaiting the train. "I'll never forget

this summer and all you've done for me, Madge. I'll come back and see you often too."

The train that carried Anne to New York brought Madge a letter—an invitation to spend two weeks at Cheltham Bay, cruising aboard the luxurious Burnett yacht. As she dispatched an enthusiastic acceptance, she little dreamed of the exciting adventure that awaited her. The story of Madge's queer reception at Cheltham Bay is recounted in the second volume of this series, entitled: "*The Deserted Yacht.*"

Jack French did not accept the news of Madge's intended departure very cheerfully.

"Why, I've scarcely had a chance to see you this summer," he protested as they walked alone one evening. "Here you're leaving in a week and I'd made all sorts of plans."

"You know you'll be too busy to even miss me," Madge teased.

She was surprised at the look which came into Jack's eyes.

"I'll miss you like everything, and you know it too, imp! Since the day you came to Loon Lake, just an undersized, freckled kid, you've been the only girl for me. You're the sweetest—" he broke off.

"Go on!" Madge urged, laughing.

Jack shook his head and smiled.

"No, until you grow a few years you must take

it for granted. But while you're at Cheltham Bay you might think of me once in a while. And don't be too surprised if you see me!"

He took her hand and together they went down to the lake to watch the moon rise over the spruce ridges.

THE END